August/1960

- *Sweetness of glucose dextrose and sucrose*
- *Dehumidification at Deran*

Candy Packaging and Marketing

- *Bag label trend*
- *Hows and Whys of individual piece wraps*
- *New broker appointments*

V 40 F8

MC

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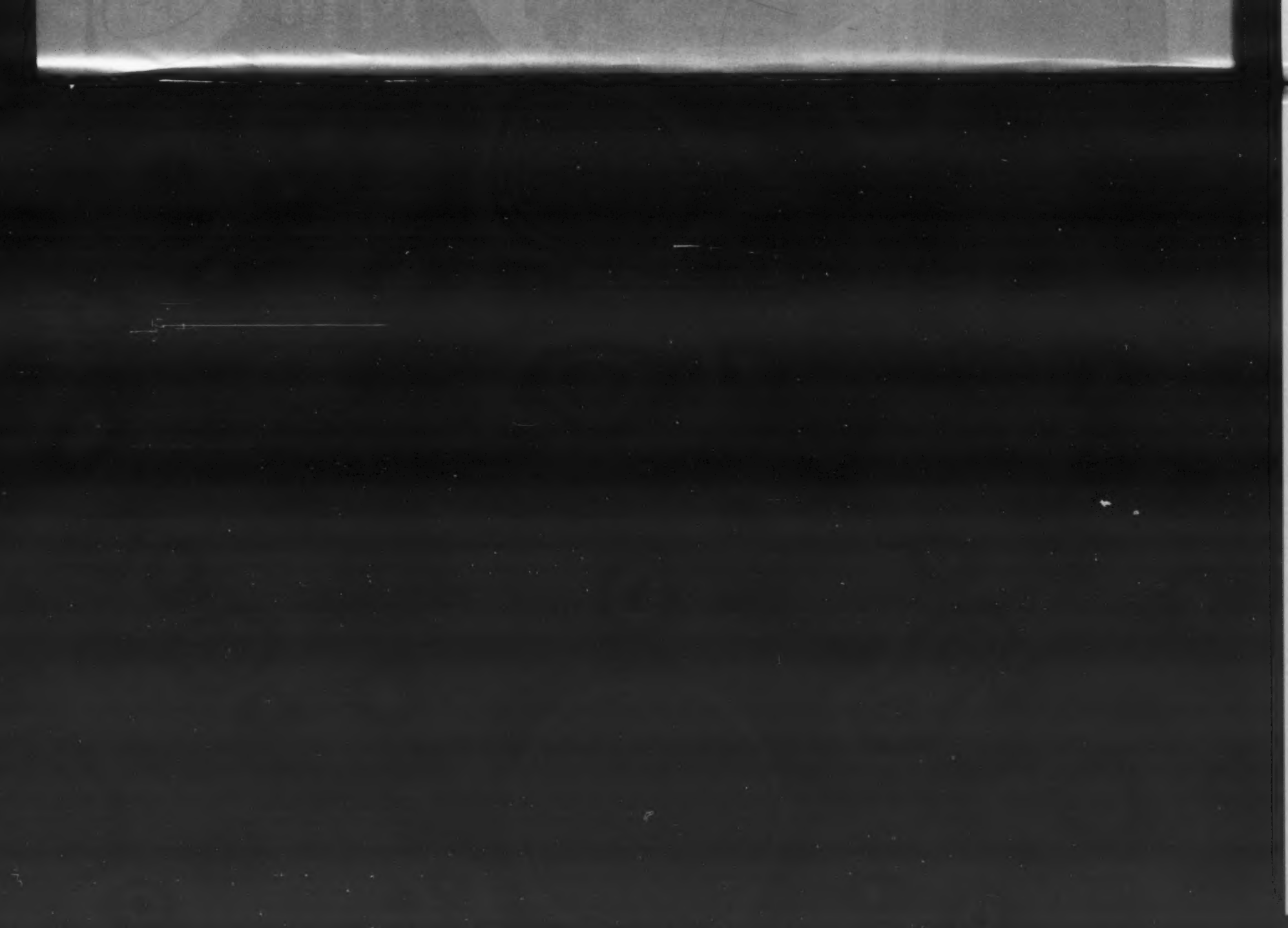

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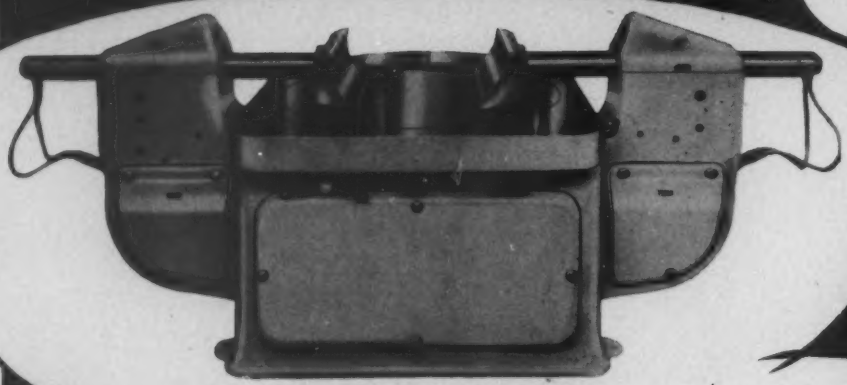

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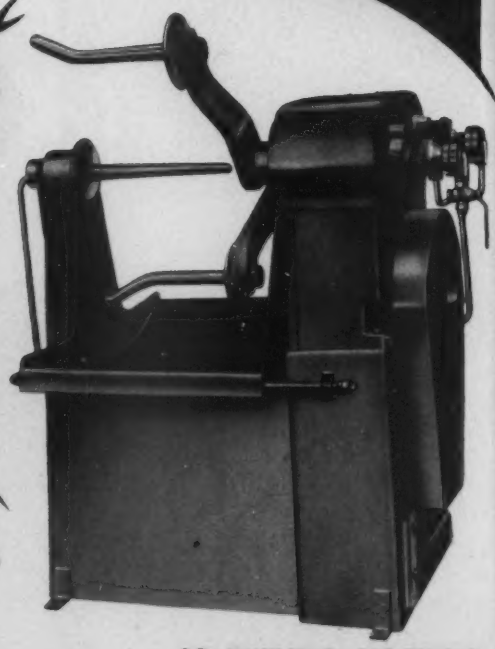
PERFECTLY CLEAR BATCHES

1M-30 KNEADING MACHINE
UP TO 90 LBS. BATCHES

WATER-COOLED ARMS ELIMINATES STICKING OF THE CANDY BATCH



39 PULLING MACHINE
UP TO 90 LBS. BATCHES

LONG-STRETCH ACTION INSURES THOROUGH AND EVEN PULL OF BATCH

130 SUGAR PULLER
UP TO 165 LBS. BATCHES

Peanut Products sold

Peanut Products Company, Des Moines, Iowa was acquired by the Ramo Investment Company, effective June 27th. The purchase price was not disclosed; assets of Peanut Products and its plant properties are in excess of $2,500,000.

Ramo is the successor to Omar Incorporated, one of the nation's largest bakeries before it was purchased in 1958 by Continental Baking Company.

Peanut Products net sales for the 44 weeks ending April 30, 1960 were $8,652,908. Net sales for the year ending June 27, 1959 were $8,394,318.

Peanut Products Company was formed in 1931 by David R. Miller, its current president, and his brother, Harry, and Jack Levensky, all of whom will remain in the business.

Fleer appoints Beck and Stevens

Raymond S. Beck has rejoined the Frank H. Fleer Corporation as assistant director of marketing, and Glenn C. Stevens has been appointed national sales manager of Fleer. Mr. Beck will be responsible for coordination of market plans and strategy for the company and has been associated with the marketing of grocery and confectionery items for many years. Mr. Stevens has been with Fleer since 1948 and moves to his new position from the post of assistant national sales manager.

Johnny Blake will leave his position as national sales manager and marketing director of Frank H. Fleer on September 1 to form a confectionery brokerage partnership in northern California with George Wilber.

Organizers of the new Candy Brokers and Salesmen's Council of America are shown at a recent meeting in Washington, D.C. Left to right are Ralph Lee, treasurer, Stanley Marks, Byron Wingler, Joe Cognetti, B. A. Fowler, vice president, Warren Durgin, Louis Specter, president, Robert Hibben, acting executive secretary, C. M. McMillan and John Gallagher.

Chocolate sales up 12% for May

May 1960 sales by chocolate manufacturers were up 12% from May 1959 sales. The estimated sales for the year to date for chocolate manufacturers is 5% over the first five months of 1959.

Package goods retailing at $1.00 or more jumped 12% in value for the first five months of 1960 over the similar period in 1959, and increased 10% in pounds.

A small increase of 2% was recorded for May 1960 sales of confectionery and chocolate products over May 1959. The five month increase was 4% in that classification.

Item	Estimated sales of current month and comparison: May 1960 ($1,000)	Percent change May 1960 from May 1959	Estimated sales year to date: 5 months 1960 ($1,000)	Percent change from 5 months 1959
Confectionery and competitive chocolate products, estimated total	72,849	+ 2	471,320	+ 4
BY KIND OF BUSINESS:				
Manufacturer-wholesalers[1]	59,492	+ 2	376,742	+ 3
Manufacturer-retailers[1]	4,902	+ 2	32,838	+ 4
Chocolate manufacturers	8,455	+12	61,740	+ 5
TOTAL ESTIMATED SALES OF MANUFACTURER-WHOLESALERS BY DIVISION AND STATES				
New England	5,238	− 7	40,484	+ 2
Middle Atlantic	18,014	+ 6	114,667	+ 3
N. Y. and N. J.	11,693	+ 5	63,227	− 2
Pa.	6,321	+ 9	51,440	+10
East North Central	23,106	− 1	139,267	+ 3
Ill.	20,520	− 4	122,608	([2])
Ohio and Ind.	1,869	+49	11,242	+60
Mich. and Wis.	717	− 8	5,417	− 7
West North Central	2,558	+ 4	17,108	+ 6
Minn., Kan., S. Dak., and Neb.	1,470	+ 8	10,691	+ 9
Iowa and Mo.	1,088	− 2	6,417	+ 2
South Atlantic	3,204	− 5	18,254	+ 2
Md., D. of C., Va., W. Va., N. Car., and S. Car.	1,414	− 7	8,145	+ 4
Ga. and Fla.	1,790	− 4	10,109	([2])
East South Central:				
Ky., Tenn., Ala., and Miss.	1,432	− 5	8,188	− 7
West South Central:				
Ark., La., Okla., and Tex.	1,674	+25	12,865	+13
Mountain:				
Ariz., Colo., Idaho, N. Mex., and Utah	711	− 1	4,379	+ 3
Pacific	3,555	+ 5	21,530	+ 6
Calif.	2,900	+ 3	17,447	+ 5
Wash. and Ore.	655	+10	4,083	+ 8

[1]Retailers with two or more outlets.
[2]Less than 0.5 percent change.

Type of product[1]	May 1960 Pounds (1,000)	May 1960 Value ($1,000)	Percent change from 1959	First 5 months Pounds (1,000)	First 5 months Value ($1,000)	Percent change from 1959
TOTAL SALES OF SELECTED ESTABLISHMENTS	91,265	34,619	541,627	−1	221,223	+1
Package goods made to retail at:						
$1.00 or more per lb.	1,748	1,794	19,956	+12	23,497	+10
$0.50 to $0.99 per lb.	6,561	3,432	41,124	+4	22,142	+4
Less than $0.50 per lb.	15,338	3,961	84,236	−2	21,851	−4
Bar goods	41,663	16,261	252,036	−5	102,927	−2
5¢ and 10¢ specialties	12,357	5,475	62,975	−1	28,374	+1
Bulk goods[2]	13,598	3,696	81,300	+7	22,432	+6

[1]Selected group of large manufacturer-wholesalers and chocolate manufacturers report sales by type of product. Companies reporting such detail account for approximately half of the total sales of manufacturers.
[2]Includes penny goods.

Data from monthly *"Current Industrial Reports"* of the U. S. Department of Commerce.

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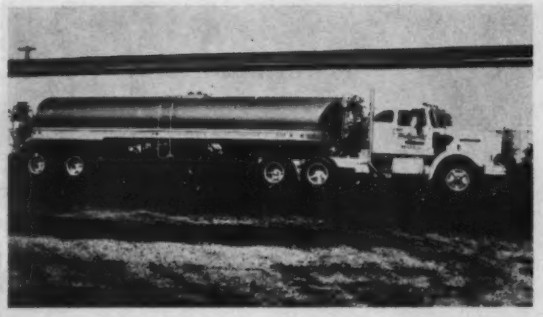


Hollywood Brands has a new fleet of six tank units for their bulk milk handling system. Under the new method, sweetened condensed milk is carried from Hollywood's own milk plants in Ohio in temperature controlled, fully insulated tanks of stainless steel to the main Hollywood plant in Centralia, Illinois. These units are housed (three at a time) in a new tile building. Here the milk is pumped from the tanks directly to the cooking kettles, completely eliminating storage tanks. During each eight hour shift, Hollywood uses a full tank of 4,500 gallons of sweetened condensed milk in producing its line of candy bars.

New officers for Canadian Confectionery Association

George O. Nichols, managing director of the Rowntree Co., has been elected president of the Canadian Confectionery Association succeeding Sydney S. Smith, president of Wm. Neilson Ltd. New vice presidents of the Association are E. L. Otto of Moirs Ltd. and J. E. B. Greaves of Fry-Cadbury.

Nut company sold

Lummis & Company, Philadelphia, one of the oldest manufacturers of canned and packaged nuts and nut products in the east and a large wholesaler of raw peanuts has been purchased by the United States Tobacco Company.

Acquisition of the nut company will be effected by exchange of United States Tobacco common stock for shares of Lummis common. Net sales of Lummis for its last fiscal year were $6,800,000.

Just a year ago the tobacco company acquired Circus Foods, Inc., of San Francisco, the leading manufacturer of canned nut products and a leading manufacturer of 5 and 10 cent candy bars in the west and southwest. With the purchase of Lummis, which recently expanded its business into nine eastern markets, United States Tobacco will be in a position to move toward nation-wide distribution of its nut products.

Whitman's creates product mgr. post

Stephen F. Whitman has created the position of product manager and has appointed G. Robert Lockhart to fill it. Mr. Lockhart's responsibility will be that of developing and coordinating complete marketing plans for new items and packages introduced by Whitman.

PMCA elects new officers

At a Galen Hall gathering that broke all records for attendance the Pennsylvania Manufacturing Confectioners' Association elected the following officers: Robert F. Baker, president, John Woodward, 1st vice president, Walter W. Zittel, Jr., 2nd vice president, Samuel K. Blumenthal, 3rd vice president, Robert F. Keppel, Sr., treasurer, Robert F. Keppel, Jr., assistant treasurer and Alex McGlinchy, secretary. The Association's executive committee consists of Clayton A. Minter, Jr., chairman, E. W. Meyers, Clarence G. Bortzfield, I. Harry Goldenberg, Otto J. Glaser, Richard M. Stark and William R. Shunk.

Assistant general sales manager named at Mars, Inc.

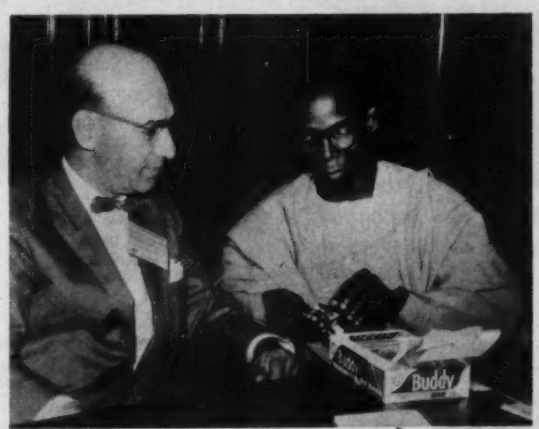
James R. Klenske has been appointed assistant general sales manager for Mars, Inc. Mr. Klenske joined the company in 1948. For the past nine and a half years he has covered Los Angeles and southern California as Mars' territory manager.

Beitz advanced at Price

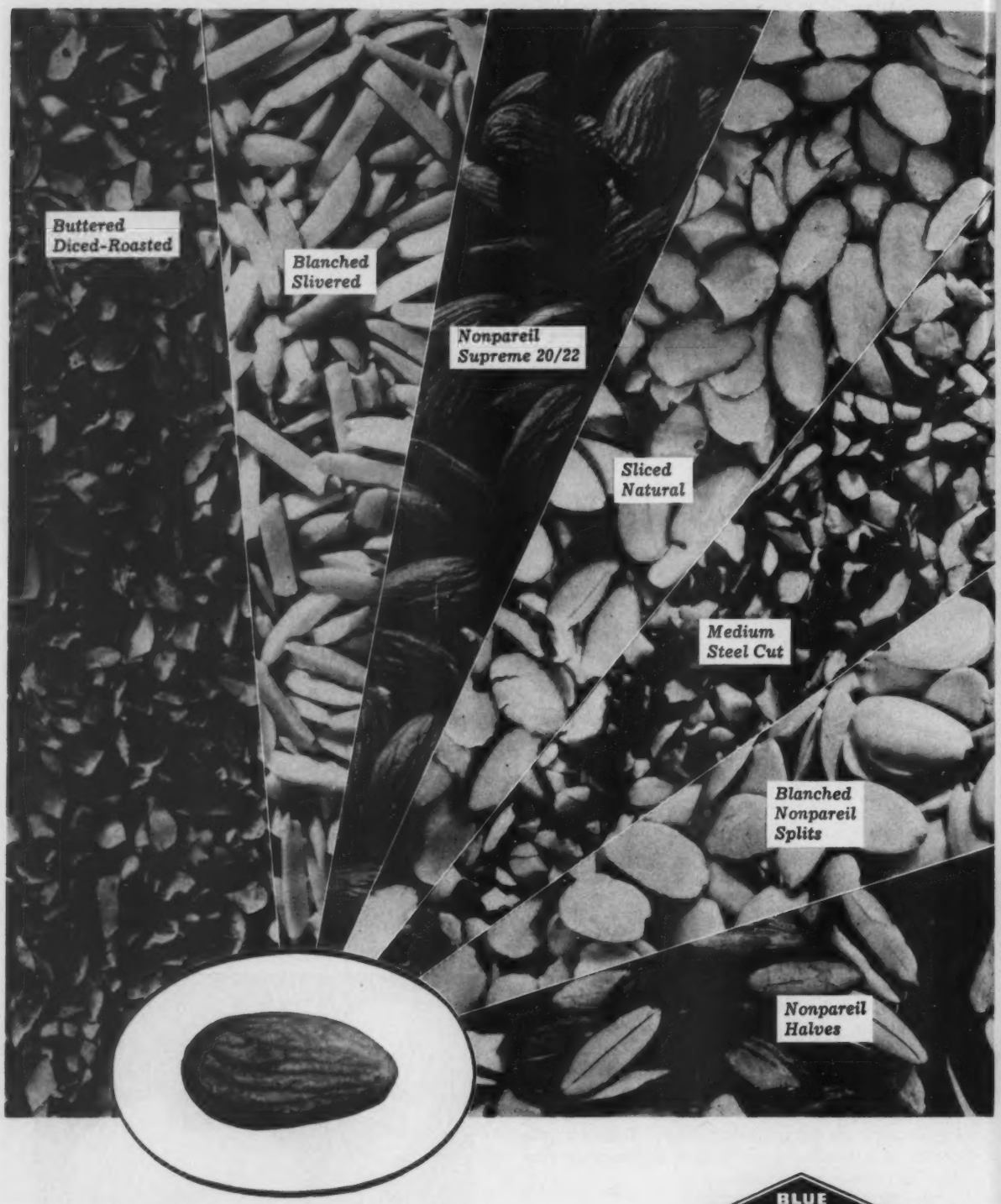
Price Candy Company, Kansas City, Missouri, has appointed Walter Beitz district manager with headquarters in Milwaukee, Wisconsin. Price operates six divisions and manufactures candy in fifteen candy kitchens.

Fleer Ltd. new Canadian firm

Frank H. Fleer has joined with Harold P. Cowan Importers Ltd. in the establishment of a new firm called Fleer Ltd. Part of a new 25,000 sq. ft. building at 115 Scarsdale Rd. in the Don Mills area of North York, Ontario, will be used by the firm for the manufacture of bubble gum.



In connection with the National Confectioners' Association convention held in June, a delegation of cocoa bean experts from Nigeria toured the Philadelphia plants of Blumenthal Bros. Chocolate Co. Bernhard S. Blumenthal is shown with the leader of the Nigerian group, Chief G. Akin Deko. This was the first time these men had seen their crop going through its manufacturing process.



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5. PROMPTNESS OF DELIVERY
6. RELIABILITY OF SUPPLY
7. COMPLETENESS OF LINE

If we are to accept the evidence of various surveys, most of the basic considerations that influence buyers in their choice of purchases are shown in the above list – and in their approximate order of importance. We must assume that flavor buyers are no exception – that they, too, regard quality, reputation and the advantages of reliable technical service as determining factors in their purchasing decisions. These, of course, are the assured advantages to those manufacturers who rely upon FRITZSCHE as their major source of sales-stimulating flavors. Prompt delivery, reliability of supply, completeness of line, and fair pricing policies – these, too, are considerations favorable to all who use this informative, easy-to-refer-to FRITZSCHE CATALOG (illustrated) as their guide to better flavors. A copy is yours upon request.

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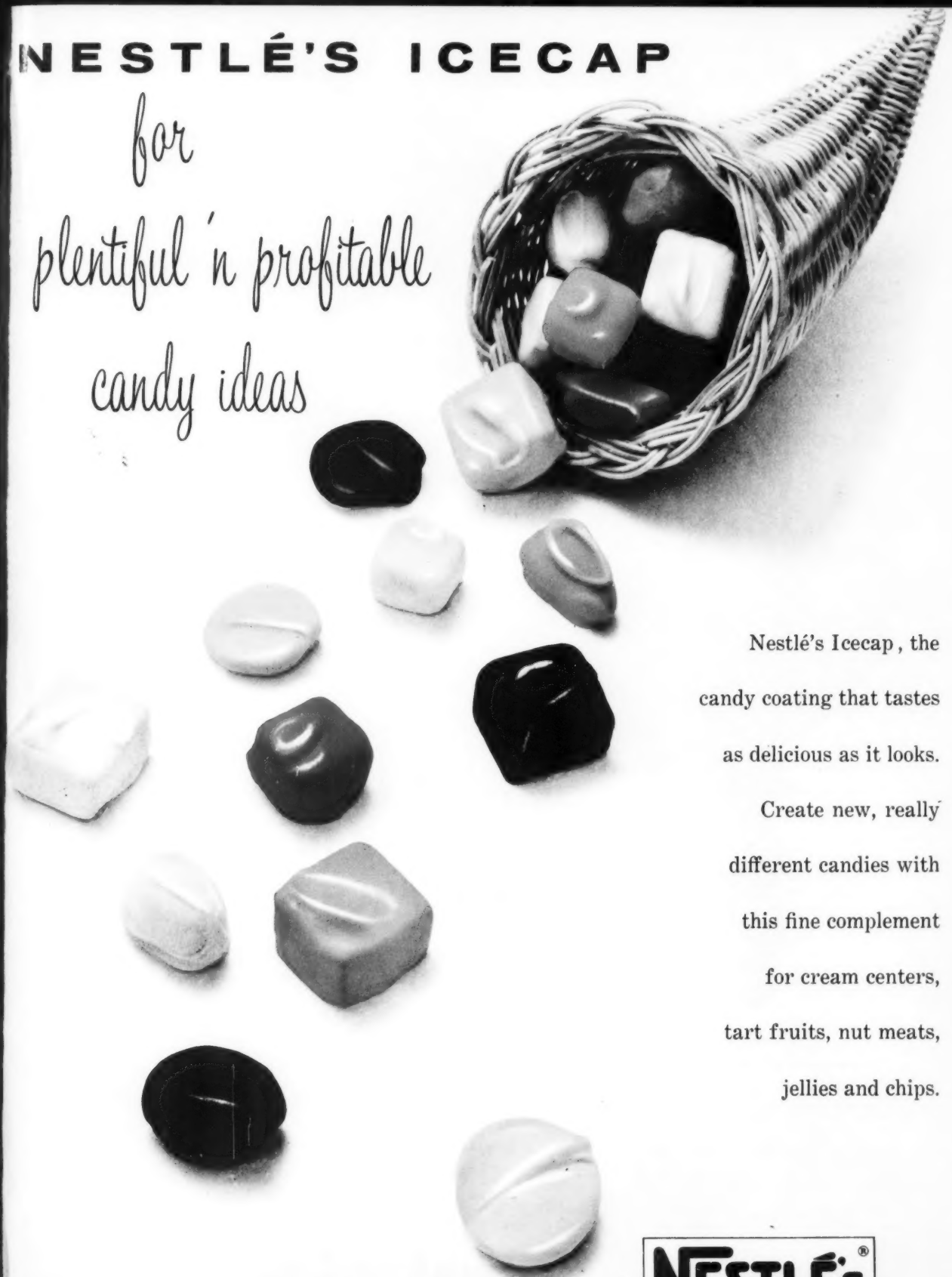

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August, 1960 Volume XL—Number 8

Edited and Published in Chicago

The Candy Manufacturing Center of the World

Sweetness of glucose, dextrose and sucrose

This paper calls attention to the fact that recent experiments make obsolete data, still retained in literature, on the relative sweetness of dextrose. Specific sweetness values can no longer be assigned to glucose syrup or dextrose for all purposes. The author shows that starch hydrolysis products, from a nutritional as well as technological standpoint, are not inferior as sweetners .....*Dr. C. Nieman* 19

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Deran Confectionery Company has found the answer to weather problems in a system which absorbs moisture from the air by a lithium chloride solution .....*Vahan S. Hintlian* 25

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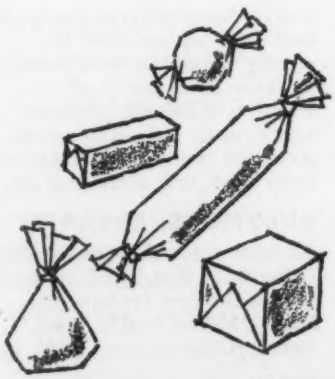

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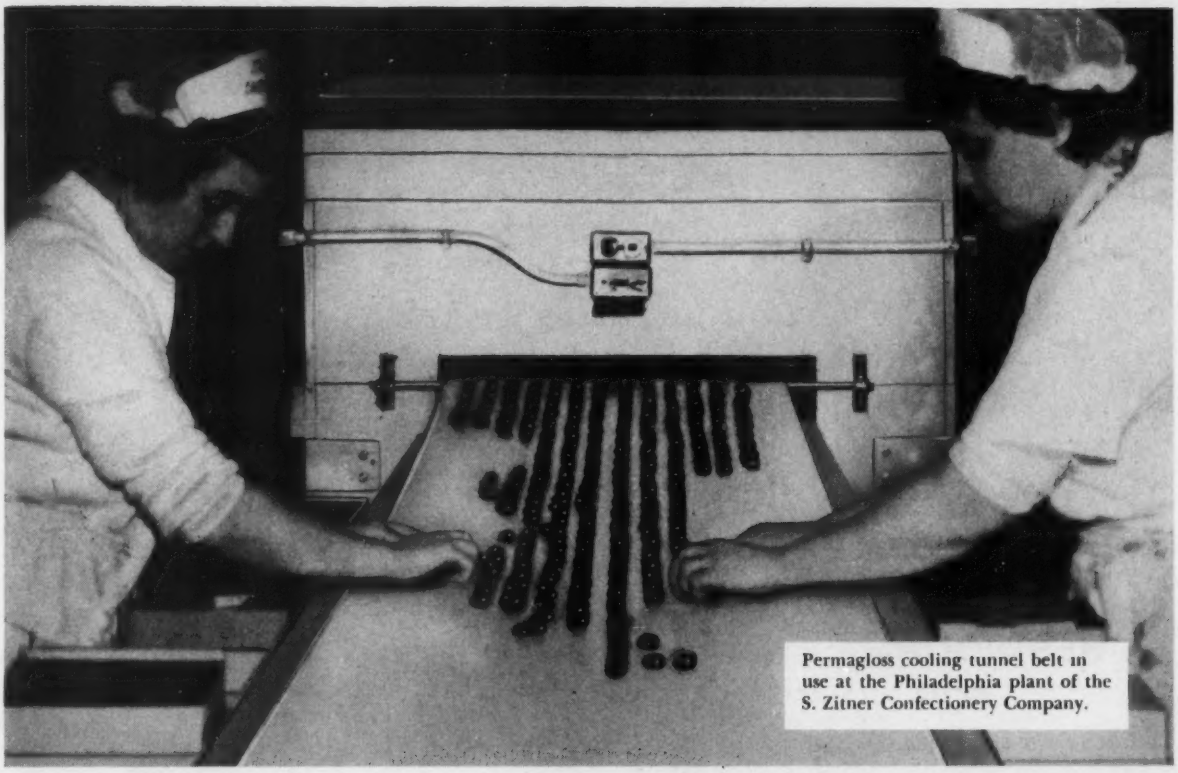

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August, 1960

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Sweetness of glucose, dextrose and sucrose

By Dr. C. Nieman

Introductory

Today, starch hydrolysis products are essential raw materials for a variety of food processing industries, and especially the confectionery industry is an important consumer of glucose syrup and dextrose. Though *Lowitz* as early as 1792 noticed that degrading of starch gave a sweet substance, the beginning of the starch syrup industry is generally related to *Kirchhoff* who, in 1811, discovered that upon boiling starch with dilute mineral acid, a sweet tasting syrup could be obtained. Interest in this process was greatly enhanced by the then prevailing shortage of cane sugar in Europe, due to the British blockade of the continent. Consequently, starch syrup was used to replace sucrose. It was thought at first that the sugar obtained from starch was identical with sucrose, but in 1814 *De Saussure* established its identity with grape sugar (glucose or dextrose), and he correctly explained the mechanism of the manufacturing process as one of hydrolysis. Since "starch sugar" was found to be less soluble and less sweet than sucrose, its production fell off greatly in 1814 when the blockade was lifted.

Against this background it is clear that from the beginning, glucose syrup has been regarded solely as a substitute for sugar. Its early use depended mainly upon its sweetness and since starch syrup as such is less sweet than sucrose, glucose sweeteners have been held in disrepute for a long time. For many years, food regulations and standards of identity have heavily leaned in favor of sugar as an exclusive sweetener. Gradually, though, the manifold technological advantages of glucose syrup for a variety of food products gained recognition, and progressive revision of food standards have generally been toward allowance of a much broader range of sweeteners. After 1926, when successful methods for the commercial production of refined dextrose had been devised, the pure sugar, too, found an ever increasing use. Whereas formerly sucrose was the only "sugar" recognised legally by that name in the U.S.A., the Secretary of Agriculture has ruled that corn sugar requires no designation other than sugar on labels of packages of food containing it (*Sweetman and MacKellar,* 1954), and in 1930 its free use was authorised (*Radley,* 1953).

Nevertheless, in Europe, even today many authorities responsible for food administration still tend to regard glucose and dextrose as second-grade sweeteners, used purposely as substitutes for sucrose, and in consequence many food legislations still tend to discriminate glucose syrup and dextrose as compared with sucrose. It should be appreciated, however, that modern food manufacture uses glucose and dextrose mainly because of their functional properties, rather than just as sweetening agents; glucose syrup and dextrose are now important competitors with sucrose in the confectionery, ice cream, beverage and soft drinks, baking, canning, freezing, and preserving industries, and it is expected that the upward trend in the use of these sweeteners will continue (*Jones* and *Thomason,* 1951).

From a technical point of view, glucose syrup and dextrose may or may not have advantages over sucrose; this is no concern of food legislation. From a standpoint of public health and nutrition, there is no reason whatsoever for discrimination since both starch syrup and refined dextrose have essentially the same nutritional value as sucrose or other edible carbohydrates, when compared on a dry-substance basis.

Thus, it would seem that the sole reason for the tenacious traces of disrepute still affecting starch hydrolysis products are related to their sweetness values as compared with sucrose. This, however, appears to be no sound basis, were it only for the fact that through the years obsolete and erroneous

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values for the relative sweetening power of starch syrups and dextrose have persisted in the literature. The listing of *Walton* (1926), for instance, is widely quoted; it is non-critical, however, and the relative sweetness of dextrose is given as 50 to 60, which is definitely too low. Most authors have, apparently, remained unaware of the fact that the sweetness of these compounds is a variable property, and may even approach or equal the sweetness of sucrose under certain conditions. It seems desirable, then, to review this subject and to present a critical survey of the sweetness of glucose (starch syrup) and dextrose (refined glucose), as compared with that of sucrose.

Nomenclature of starch hydrolysis products

Starch syrup, glucose syrup, corn syrup, potato syrup, confectioners glucose, commercial glucose, and glucose are the names used for the thick, pale or colorless, noncrystallizing liquid resulting from the partial hydrolysis (so-called conversion) of starch, followed by clarification, decolorization, and evaporation to syrup density. Both potato and corn starches may be used as a raw material, and the general name starch syrup should be preferred, though "glucose" is the more common trivial name. Commercial "glucose" is not, however, a product of definite composition, and it should be clearly differentiated from the definite chemical substance D-glucose, commonly termed dextrose in English. A large family of tailor-made, well-standardized glucose syrups is available, comprising a series of syrups differing chiefly in the degree of saccharification. These products are differentiated by their dextrose equivalent (D.E.), the total content of reducing sugars calculated as dextrose and expressed as a percentage of the dry substance. The D.E. usually ranges from 30 to 60; the 60-80 D.E. range is semicrystallizing and because of handling difficulties is not commercially produced. Starch syrups of very high conversion may be obtained by so-called dual conversion, namely, a combination of acid hydrolysis, the usual procedure, and enzymatic hydrolysis. In the U.S.A., corn syrup solids or dried starch syrup are available; this product is essentially a dehydrated corn syrup, wherein the moisture content is reduced to about 5 per cent or less by spray-drying.

Starch sugar, crude corn sugar, solid glucose and masse are the names in use for the brown or yellow-colored, bitter-sweet flavored amorphous mass resulting from high conversion of starch followed by evaporation and crystallization. It really is made up of minute crystals of glucose (dextrose), and the percentage of dextrose is denoted by figures such as "70" or "80", indicating the percentage on a moist basis, and corresponding to D.E. values of 83 to 91 for dry substance contents of approximately 84 and 88 per cent.

Refined corn sugar, granulated corn sugar, glucose or dextrose are the names for the white, finely crystallized and practically pure D(+)–glucose obtained by complete hydrolysis of starch. Both hydrated and anhydrous forms are known, the former containing one molecule of water of crystallization, and the latter having been dried completely. Dextrose monohydrate contains an average of 91.4 per cent glucose and 8.5 per cent of moisture, whereas anhydrous dextrose has less than 0.5 per cent of moisture. Two crystalline modifications of dextrose are known, α–and β–glucose, differing in stereochemical configuration at the reducing (anomeric) carbon atom in the ring (pyranose) form, and therefore having different optical rotations and solubilities. Because of this, a change in optical rotation (so-called mutarotation) is observed in freshly prepared aqueous solutions. The more dextrorotary isomer is known as α–glucose, and when dissolved this modification mutarotates downward to a value less positive than the initial value, corresponding with an equilibrium mixture consisting of approximately 37 per cent of α–glucose and 63 per cent of β–glucose. The formation of one of these anomeric forms depends upon the conditions of crystallization and seeding. Below 50° C, α–glucose monohydrate is the stable crystalline phase, but above this temperature the anhydrous form of α–glucose is obtained. At still higher temperatures, β–glucose forms the solid phase. Spray-drying of a hot concentrated glucose solution produces a mixture of α–and β–sugar. The β–glucose is of technical interest because of its greater initial solubility, but the ordinary commercial form of crystalline dextrose is α–glucose-monohydrate.

Nearly all data on the relative sweetness of starch syrup and dextrose, listed in this review, have been obtained with syrups and α–glucose-monohydrate. When necessary, recalculations have been made to obtain the sweetening power on a dry solids basis, assuming average moisture contents of 20 per cent in starch syrups and 8.5 per cent in crystalline dextrose. Data on crude corn sugar are not included.

Sweetness and its measurement

The strength of the sensation sweet can not be measured quantitatively in absolute terms, but must be tested by consumer taste. Since perception to sweetness and to differences in sweetness varies with individuals, essentially only subjective measurements are possible. However, by taking the opinions of several tasters and weighing statistically the results, the measurement of sweetness differences can be made, in a sense, objective. *Paul* (1921) appears to the first to analyse his data by a statistical procedure, devised by *Pauli* (1920, 1921).

In early work on the comparison of sweetness, mostly the so-called threshold or liminal method has been applied, in an effort to sidestep the direct evaluation of differences or equality in sweetness between two compounds. This method measures the lowest concentration, or limen value, of a test solution required to elicit a just perceptible but definite sensation of sweetness. Comparison of the sweetness of various sugars by means of the liminal method have been carried out by *Sale* and *Skinner* (1922) and *Biester* et al (1925), whereas threshold determinations of sweetness by *Hahn* et al (1938) and *Fabian* and *Blum* (1943) can be used to calculate the relative sweetness of some sugars at limen concentrations. The threshold method is, however,

of very limited value since the relative sweetness of sugars is not a constant but is materially affected by the concentrations chosen for comparison. In fact, limen values mostly differ markedly from the values obtained at higher (supraliminal) concentrations.

When comparing the sweetness of a compound with that of sucrose in supraliminal concentrations, various psychophysical procedures are possible for carrying out the sensory difference test. Generally some variation of the method of successive paired comparisons or constant stimulus differences techniques has been used. For instance, a series of dilutions of the sugar under investigation is compared with a standard sucrose solution and the information obtained, namely, the number of judgments of inequality, is statistically analysed to compute the probable solution of equal sweetness. Such serial comparisons, repeated for various concentrations of the sucrose standard, have been reported by *Paul* (1921), *Dahlberg* and *Penczek* (1941), *Cameron* (1947), *Lichtenstein* (1948), and *MacLeod* (1952); these methods clearly proved that the relative sweetness of sugars varies with concentration.

Another procedure for supraliminally estimating the relative sweetness of sugars, recently described by *Schutz* and *Pilgrim* (1957), is the ranking method of single stimuli rating the sweetness of one sugar at various concentrations directly, on the basis of a subjective intensity scale. Sweetness values were derived from the ratios of the concentrations of equal subjective intensities, and no direct comparisons between the sugars were involved. In this case, too, the relationship between relative sweetness and concentration could be established, and certain peculiar patterns emerged.

Since no absolute rating for sweetness is possible, only relative sweetness as compared with one or the other standard can be reported. In most studies sucrose has been used as the basis of comparison, its sweetening power being indicated as 100 per cent, and the relative sweetness of other compounds has been stated in terms of sucrose. Whereas in that case the relative sweetness of most sugars varies markedly with the concentration, *Cameron* (1947) has shown that if glucose were chosen as the standard, most sugars would show much more constant values. However, since this is not valid for sucrose, a comparison of glucose with sucrose would not benefit from a change of standard. Because, on the other hand, the comparison with sucrose as a standard corresponds with the more practical approach, in this review all sweetness values are given as percentages of the sweetening power of sucrose.

Relative sweetness of glucose and dextrose

At the beginning of this century, hardly any quantitative work has been done concerning the relative sweetness of sugars. *Becker* and *Herzog* (1907), for example, report that they were unable to find a systematic study in the literature, and they consider themselves the first to do so. Their results, however, are also only qualitative, and the sweetness of dextrose is reported to be equal to that of lactose. This study can not be considered reliable since fructose is stated to be less sweet than sucrose. It appears further that the relative sweetness of dextrose has been discussed since the Napoleonic era. *Verax* (1885) reports that early opinions vary between values of 40 to 50, and he quotes *Parmentier* stating that grape sugar is nearly as sweet as cane sugar, namely 84 per cent as sweet in a 23 per cent solution. Though subject to much criticism at that time, this early value appears to be nearly correct in the light of more recent data.

In table 1 all available data on the relative sweetness of the single sugar, dextrose, have been summarized. Whenever values at different concentrations were available, those levels matching or nearly matching a 10 per cent sucrose solution have been chosen for this table. Since relative sweetness is dependent on the concentration, sweetness values are accompanied by the concentrations at which these values were obtained. When necessary, literature values have been recalculated on a solids basis.

Table 2 summarizes the data of various investigators on the relative sweetness of glucose syrups of varying degrees of conversion. In this case, too, recalculations on a dry substance basis have been made, and sweetness values of concentrations matching sucrose standards of approximately 10 per cent concentration have been favored. Since the sweetness of starch syrup increases, of course, with the degree of conversion, whenever possible dextrose equivalents of the syrups tested have been indicated.

The data collected in tables 1 and 2 clearly show that there is a sometimes wide divergency between the results of various investigators, and that even comparable methods give far from identical values. Before trying to derive a probable average value for the relative sweetness of glucose syrup and dextrose, it is pertinent to discuss factors that may influence these values.

Factors influencing relative sweetness

Until some 20 years ago, little or no attention was paid to the possibility that the relative sweetness of sugars might be influenced by various, sometimes not so obvious factors. Apart from *Carr* et al (1936), who quite incidentally stated that α–and β–glucose have exactly the same degree of sweetness, *Cameron* (1943) was the first to study the relationship between stereochemical configuration and sweetness of dextrose; since the sweetness of sugars and polyhydric alcohols is obviously associated with the presence of hydroxyl groups, it seemed probable to him that the spacial arrangement of these groups may effect the degree of sweetness. It appeared that freshly made solutions of α–glucose in which the proportion of the α–isomer is approximately 84 per cent, were sweeter than equilibrium mixtures consisting of about 37 per cent α–glucose and 63 per cent β–glucose. It follows that α–glucose is definitely sweeter than β–glucose, and the data suggested that the commonly measured equilibrium mixture of $\alpha\beta$–glucose has a sweetness of approximately 95 per cent

of that of α–glucose. This is confirmed by the results of *Schutz* and *Pilgrim* (1957) for dextrose solutions of about 15 per cent concentration; in higher concentrations the difference decreases.

The important fact that the relative sweetness of dextrose is materially enhanced under two conditions, namely, increased concentration of dextrose and the simultaneous presence of sucrose, could have been derived already from work done in U.S.A. during the first world war, when the scarcity of sucrose and stringent regulations regarding its use necessitated its replacement by other sweeteners, for instance in ice cream. *Frandsen* et al (1918) showed that in ice cream up to 50 per cent of the cane sugar could be satisfactorily replaced with corn sugar. Though corn sugar in itself did not contain the desirable sweetening qualities for the ice cream mix, there was a marked improvement in combination with cane sugar. Around 1939, the influence on sweetness of both dextrose concentration and the presence of sucrose was more fully investigated and could no longer be ignored, though even today many authors have apparently remained unaware of these facts.

It should be appreciated, then, that data drawn from older studies have to be modified for various reasons. One reason for this is that the sweetening power of syrups and especially dextrose has been improved as the result of a higher degree of refinement now characteristic of these products. It is also possible that sometimes the sweetness has been reduced by traces of sulphurous acid still present in starch hydrolysis products, or that the sweetness has been influenced by the presence of acids, salts,

Table 1.—Relative sweetness of dextrose (pure glucose, solids basis), as compared with sucrose (= 100).

Investigators	Conc. of dextrose	Relative sweetness
1. Bailey (1885)	0.6 %(b)	54
1a Behr (1882)	– (a)	60
1b Sternberg (1899)	– (a)	50
2. Abel (1913)	– (a)	40
3. Ayers et al (1918)	– (a)	80
4. Ruehe (1918)	– (a)	80
5. Paul (1921); Taufel (1925)	4–19%	52
6. Sale and Skinner (1922)	1.2 %(b)	50
7. Deerr (1922)	10 %	60
8. Biester et al (1925)	1.8 %(b)	74(c)
9. Carr et al (1936)	– (a)	75
10. Hahn et al (1938)	1.7 %(b)	51
11. Corbett and Tracy (1939)	– (a)	73
12. Renner (1939)	35 %	88
13. Eickelberg (1940)	5–20%	75
14. Dahlberg and Penczek (1941)	13 %	79
15. Fabian and Blum (1943)	1.6 %(b)	80
16. Cameron (1943, 1944, 1945)	15 %	69
17. Lichtenstein (1948)	16 %	65
18. Turnbow et al (1949)	13 %	75
19. Roederer (1952)	– (d)	55
20. MacLeod (1952)	12 %	77
21. Tsuzuki and Yamazaki (1953)	9 %	57
22. Whymper (1955)	10 %	75
23. Sjostrom & Cairncross (1955)	14 %	72
24. Schutz and Pilgrim (1957)	16 %	63

a) Conditions and method of comparison unknown.
b) Threshold determinations.
c) Recalculated as 50 (for 1.3% concentration) by **Cameron** (1943).
d) Dilute solutions.

Table 2.—Relative sweetness of glucose (starch syrup, solids basis), as compared with sucrose (= 100).

Investigators	Conc. of solids	Relative sweetness	Degree of conversion
25. Skinner and Sale (1918)	–(a)	25	D.E. = 42
26. Ruehe (1918)	–(a)	60	Probably D.E. = 42
27. Leach and Winton (1920)	–(a)	67(b)	Probably D.E. = 42
28. Paul (1921)	6–30%	33	Probably D.E. = 42
29. Dahlberg and Penczek (1941)	25%	40	D.E. = 42.5(c)
30. Dahlberg and Penczek (1941)	18%	56	D.E. = 64.5(f)
31. Turnbow et al (1949)	22%	45	D.E. = 42(d)
32. Turnbow et al (1949)	18%	54	D.E. = 55(e)
33. Turnbow et al (1949)	16%	61	D.E. = 63(f)
34. Sjostrom and Cairncross (1955)	25%	39	D.E. = 42

a) Conditions and method of comparison unknown.
b) Considered the maximum value.
c) Corn syrup solids.
d) Confectioners' corn syrup.
e) High conversion corn syrup, acid-converted.
f) High conversion corn syrup, enzyme-converted.

flavoring materials and other non-sugar substances. The earlier mentioned factors, namely, concentration and supplementary effect of other sugars, remain the outstanding sources of discrepancies between various authors on the relative sweetness of glucose and dextrose.

Sweetness of glucose in admixture with sucrose

Corn sugar and corn syrup have been successfully tried as substitutes for sucrose in ice cream. *Frandsen* et al (1918) found that 50 per cent of the cane sugar used in ice cream could be satisfactorily replaced with corn sugar, and *Ayers* et al (1918) stated that corn syrup could also be used to replace as much as 50 per cent, on a basis of its being one-half as sweet as sucrose. Since most of the earlier investigations on dextrose and glucose syrup were made previous to the development of more improved methods of manufacture, *Corbett* and *Tracy* (1939) and *Dahlberg* and *Penczek* (1940) studied again the merits of dextrose and, respectively, glucose syrup as they were refined at that time.

Corbett and *Tracy* (1939) were the first to clearly prove that when used in conjunction with sucrose in ice cream, dextrose had a sweetening value considerably higher than it had in an aqueous solution, whereas anhydrous dextrose could even replace cane or beet sugar pound for pound. Similar results for glucose syrup were obtained by *Dahlberg* and *Penczek* (1940). It has even been stated that in ice cream and in combination with sucrose, dextrose is sweeter than sucrose (*Leighton* and *Williams*, 1943).

This so-called supplemental action of sugars could also be demonstrated in pure water solutions by *Dahlberg* and *Penczek* (1941) for both dextrose and glucose syrup. These investigators concluded that both dextrose and high conversion corn syrups have the same sweetness as sugar when present for one third in combined solutions of 25 per cent total concentration, whereas regular corn syrup was as sweet as sucrose in 40 per cent total concentrations. The potentiation of the sweetness of dextrose by sucrose was confirmed by *Cameron* (1943, 1944), whereas similar results with mixtures of dried corn syrup and sucrose were obtained by

Table 3.—Relative sweetness of dextrose (pure glucose, solids basis), in mixtures with sucrose.

Investigators	Concentration sucrose	Concentration dextrose	Relative sweetness	Method
35. Ayers et al (1918)	—	—	97	ice cream
36. Corbett and Tracy (1939)	10.5%	3.8%	91(a)	ice cream
37. Corbett and Tracy (1939)	11.2%	3.8%	100(b)	ice cream
38. Dahlberg and Penczek (1940)	11.2%	4.2%	91(a)	ice cream
39. Dahlberg and Penczek (1941)	10.0%	5.3%	94	pure solution
40. Dahlberg and Penczek (1941)	16.7%	8.3%	100	pure solution
41. Dahlberg and Penczek (1941)	26.7%	13.0%	102	pure solution
42. Leighton and Williams (1943)	10.0%	5.0%	125	ice cream
43. Cameron (1943, 1944)	10.0%	5.6%	90(c)	pure solution
44. Lichtenstein (1948)	28.5%	14.2%	81	pure solution
45. Turnbow et al (1949)	—	—	90	ice cream
46. Roederer (1952)	15.0%	7.1%	70	pure solution
47. Roederer (1952)	10.0%	13.3%	75	pure solution

a) Hydrated dextrose, regular form. b) Anhydrous dextrose, slightly more refined than hydrated dextrose. c) Average value.

Table 4.—Relative sweetness of glucose (starch syrup, solids basis), in mixtures with sucrose.

Investigators	Concentration Sucrose	Concentration Syrup	Relative sweetness	Conversion degree syrup	Method
48. Ayers et al (1918)	4.2%	6.8%	63	D.E. = 42	ice cream
49. Dahlberg and Penczek (1940)	11.2%	7.5%	50	D.E. = 42.5(a)	ice cream
50. Dahlberg and Penczek (1940)	11.2%	5.0%	76	D.E. = 64.5.b)	ice cream
51. Dahlberg and Penczek (1941)	10.0%	8.7%	57	D.E. = 42.5(a)	pure solution
52. Dahlberg and Penczek (1941)	16.7%	13.0%	64	D.E. = 42.5(a)	pure solution
53. Dahlberg and Penczek (1941)	26.7%	13.3%	100	D.E. = 42.5(a)	pure solution
54. Dahlberg and Penczek (1941)	10.0%	6.3%	79	D.E. = 64.5(b)	pure solution
55. Dahlberg and Penczek (1941)	16.7%	8.3%	100	D.E. = 64.5(b)	pure solution
56. Dahlberg and Penczek (1941)	26.7%	13.3%	100	D.E. = 64.5(b)	pure solution
57. Leighton and Williams (1943)	7.5%	12.5%	60	D.E. = 42.5(a)	ice cream
58. Leighton and Williams (1943)	7.5%	10.0%	75	D.E. = 64.5(b)	ice cream
59. Turnbow et al (1949)	—	—	56	D.E. = 42 (a)	ice cream
60. Turnbow et al (1949)	—	—	74	D.E. = 55 (c)	ice cream
61. Turnbow et al (1949)	—	—	82	D.E. = 63 (b)	ice cream
62. Roederer (1952)	15.0%	8.0%	63	D.E. = 42 (a)	pure solution
63. Roederer (1952)	10.0%	15.0%	69	D.E. = 42 (a)	pure solution
64. Roederer (1952, 1954)	10.0%	13.4%	75	D.E. = 53	pure solution
65. Roederer (1952, 1954)	15.0%	8.3%	76	D.E. = 53	pure solution

a) Regular corn syrup. b) Enzyme-converted syrup. c) Acid-converted syrup.

Sjostrom and *Cairncross* (1955). The last-mentioned investigators reported that, for example, mixtures of iso-sweet solutions of sucrose and dried corn syrup were found to be slightly sweeter than either parent solution.

In tables 3 and 4 some of the literature data on the relative sweetness of, respectively, dextrose and glucose syrups are summarized. Again, when necessary and possible, values have been recalculated on solids basis, and the absolute concentrations of both sucrose and starch sweeteners have been included. All comparisons have been made in supraliminal concentrations.

Dextrose, in admixture with sucrose, apparently has a relative sweetness from at least 90 to 100 per cent of that of sucrose. Discarding the incidental data of *Roederer*, it can be seen from table 1 that, in pure solutions, the average sweetness value for dextrose is 93 when present in a proportion of one-third of the total sugar concentration. In ice cream, in approximately the same proportional concentration, the relative sweetness of dextrose is even higher and averages as much as 99. It can be concluded, therefore, that in concentrations as low as 5 per cent, but with sucrose simultaneously present, dextrose has nearly the same sweetness as sucrose.

Glucose syrups, too, have a markedly increased sweetness in conjunction with sucrose. In ice creams, when present in solids concentrations of 7 to 13 per cent, glucose syrups have average sweetness values of 57, 74, and 78 for conversion degrees of, respectively, D.E. = 42, D.E. = 53, and D.E. = 64. In pure solutions the sweetness is even higher, varying between 57 and 100 for glucose syrup of D.E. = 42, and between 79 and 100 for enzyme-converted syrup of D.E. = 63. It is clear that even medium-converted starch syrup may have a sweetness comparable with sucrose, provided sucrose is simultaneously present in the right proportionate concentration.

Sweetness of glucose in different concentrations

Whereas *Paul* (1921) stated that the relative sweetness values for dextrose and glucose syrup did not vary in the concentration range of 4 to 19 per cent for dextrose and 6 to 30 per cent for glucose syrup (both corresponding with sucrose solutions from 2 to 10 per cent), later results showed that the contrary is true.

It appears that *Renner* (1939) was the first to call attention to the fact that there does not exist a relation between the sweetening power of dextrose and sucrose which can be fixed definitely. He stated that when more concentrated aqueous solutions are used, dextrose becomes almost as sweet as cane sugar. *Eickelberg* (1940) confirmed this in reporting that in concentrations of 30, 40, and 50 per cent sugar, dextrose solutions tend to be equal in sweetness to sucrose solutions of identical concentrations. *Dahlberg* and *Penczek* (1941) thereupon made a more thorough experiment to determine the effect of variations in concentration upon the relative sweetness of several sugars, among them dextrose and glucose syrup. Their results have been

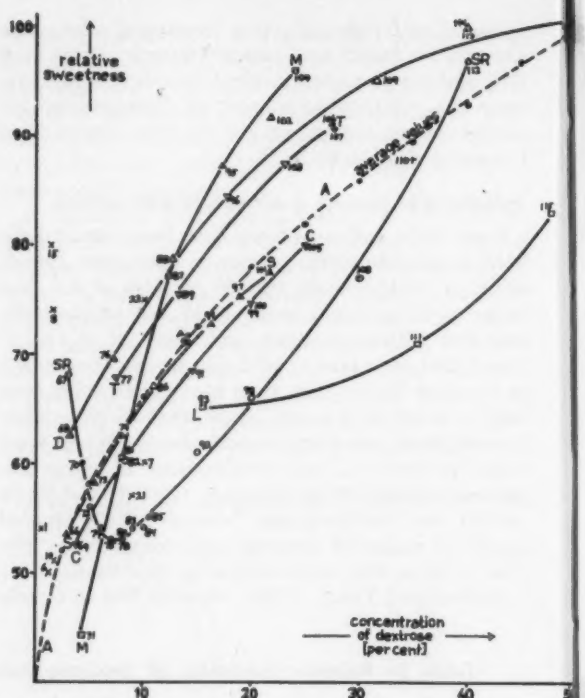

fig. 1. Relative sweetness of dextrose as affected by concentration

confirmed by later investigators in that it has been repeatedly demonstrated that the relative sweetness of dextrose increases with increasing concentration. Recently, *Schutz* and *Pilgrim* (1957) have observed a peculiar relationship, namely an initial slight decrease followed by an increase of the sweetness of dextrose with increasing concentration; their data lead to the conclusion that dextrose solutions have a minimum sweetness at a concentration of approximately 8 per cent, corresponding with a 4 per cent sucrose solution.

Table 5 contains the available literature data of several investigators on the relative sweetness values of dextrose, in varying concentrations. On the basis of these data the following curves in figure 1 have been drawn: D = *Dahlberg* and *Penczek* (1941), including two values of *Eickelberg* (1940); C = *Cameron* (1943, 1944, 1945), including one value of *Eickelberg* (1940); L = *Lichtenstein* (1948); T = *Turnbow* et al (1949); M = *MacLeod* (1952); S = *Sjostrom* and *Cairncross* (1955); SR = *Schutz* and *Pilgrim* (1957), including both values of *Renner* (1939). Also several data from table 1 have been included in figure 1, namely, those of *Sale* and *Skinner* (1922) and *Hahn* et al (1938), which connect well with curve S; of *Biester* et al (1925) and *Fabian* and *Blum* (1943), which correspond with curve SR; of *Whymper* (1955), connecting with curve D, and of *Deerr* (1922) and *Tsuzuki* and *Yamazaki* (1953). All these values have been marked with their numbers of entry in tables 1 and 5.

In figure 1 it can be seen that whereas the curves according to *Dahlberg* and *Penczek*, *Cameron*, *Turnbow*, and *Sjostrom* and *Cairncross* have similar

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Dehumidification at Deran

By Vahan S. Hintlian
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Several years' experience with varied applications of chemical dehumidification in our plants has demonstrated conclusively that its performance gives far more uniform results than refrigeration.

The problem was, of course, as old as our business. When Deran Confectionery Company was founded in 1929 as a small family business, it was often necessary to work at night during the summer season to get any production at all—daytime humidity made operations impossible.

Our organization has grown since then to a $13.5-million annual business employing more than 1100 people, including our subsidiaries, H. L. Hildreth Company in Boston and Connecticut, and Miller & Hollis Corporation, Boston.

As our company grew, so did the available equipment for controlling atmospheric conditions. Blowers and fans helped some in the early period, and refrigeration equipment took us a step closer to proper conditions—but never quite close enough.

We do not believe refrigeration alone—or extreme cooling with reheating—can provide steady control economically under all conditions. Chemical dehumidification can, and does in several locations in our Cambridge and Boston plants.

The method we adopted was the Kathabar system in which moisture is absorbed from the air by a lithium chloride liquid solution. The absorptive capacity of this solution, in any given concentration, varies with its temperature. Thus controlling the temperature of the solution exercises positive control over the dehumidification capacity. This temperature regulation is accomplished by a coolant such as water or one of the refrigerants, depending upon the requirements of the installation.

Our first installation was made in our Miller & Hollis division plant in Boston. It was applied to one of our most serious humidity problems—control of the atmosphere in the cream center room. In this area, where freshly deposited cream centers are stored, the air often reached 85 to 90% RH for prolonged periods in the summer.

This, of course, seriously retarded the setting of the creams, and was damaging to quality as well as production schedules. An average of 16 batches per day, of some 6500 individual centers per batch, are deposited at 75 degrees in this room. To set the creams properly and prepare them for removal to bottoming and coating operations on schedule requires a relative humidity of no more than 40%. Yet, even with refrigeration air conditioning, there were frequent periods when it was impossible to bring the humidity below 60 or 70%.

Under these conditions, with a 2-horsepower cooling unit and blower, we sometimes could not remove the cream centers for 18 or 20 hours. This seriously limited the effective capacity of the room, delayed other operations, and made it almost impossible to get a good product.

To eliminate this problem, we installed a Kathabar unit with a capacity of 1350 cubic feet of air per minute. The system was designed to work in conjunction with our air cooling equipment, which takes care of the direct heat load while the Kathabar handles the moisture load.

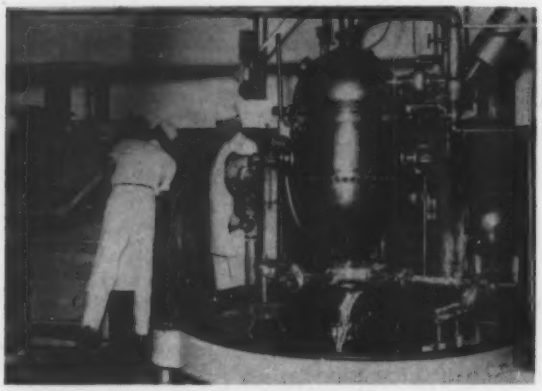
With this system we have been able to maintain a year-round level of 35% RH—even better than our specified maximum of 40%. Under these conditions, cream centers are moved out after as little as 4 hours' storage.

This makes a better product, and increases the room's effective capacity several times. In addition, the product is more sanitary, because of the system's germicidal effect which destroys up to 97%

The author (left) and plant superintendent, Chet Brett, discuss plans for Deran's next Kathabar installation, to control humidity in this dipping room.

of air-borne bacteria. And employee health and morale are substantially improved at the same time.

The unit takes 850 cfm of return air plus 500 cfm of outside air, and exposes this mixture to a floor of lithium chloride solution at a temperature



Cream centers mixed here and formed in Friend machine at left are passed through small window in wall into Doran's conditioned storage room. Storage is at 35 to 40% RH, despite high moisture content of the batches.

carefully controlled to extract just the right amount of moisture. The treated air, at the rate of 1350 cfm, is delivered at 65°F and 25 gr./lb. (31° D.P.) of moisture.

Our water supply sometimes reaches 70 to 71°F in summer, which would not permit the system to operate at full efficiency. Therefore we cool the solution with a direct expansion Freon coil.

There are two basic sections of the Kathabar system, the conditioner and the regenerator. The conditioner removes a specified quantity of water from the air, thereby supplying the air at the required moisture content to maintain desired conditions in the room. A small amount of solution is continually being pumped over the regenerator section where it is heated and contacts a stream of scavenger air which picks up the water previously absorbed by the conditioner section and exhausts it to the outside. Power requirements for the system are 3/4 horsepower for the Kathene solution pump and 1/2 h.p. for the regenerator fan.

Overall, the cost of this system is rather small, and we feel certain that it pays its way. We have not, however, attempted to make any direct measurement of dollar savings gained through the improved production. We have been far more concerned with obtaining the best product under best conditions, and this we have achieved without question.

More recently we have installed other Kathabar units to serve specific needs elsewhere. We have two in our Cambridge plant, in the packing room and the chocolate build-up room. An additional unit is now planned for the dipping room in the Miller & Hollis plant, and also one for a continuous cooling line is being designed.

We no longer need to be at the mercy of the weather, for we are in a position to build our own weather to suit the need.

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Makers of Fine Chocolate and Cocoa

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Hows and whys of individual piece wrapping

An educated estimate of the percentage of count goods which are individual wrapped would have to be somewhere in the area of 60%. This spiralling trend to wrap count goods has its impetus in increased consumer interest in sanitation and in the manufacturers' awareness of the increased versatility of wrapped 1¢ and 2¢ pieces.

Among retailers there is a growing dislike to unwrapped goods, and local health officials are their allies. The trend to mix-your-own displays coupled with the ever present tendency among the best customers for penny goods, children, to want to handle and examine what they want to buy, has emphasized the sanitary aspect of individually wrapped count goods.

The versatility of the wrapped piece is evident in considering the many new marketing ideas which demand ways and means to change displays and packages. For example, wrapped count goods can be bagged for a grocery item; they can be packaged for a Halloween Trick or Treat sale; they can be displayed in open bins without the need for any protective cover; they can be overwrapped, boxed and moved in order to provide any type of display which the retailer feels will help sales.

An unwrapped piece is necessarily confined to one type of display. It cannot be handled. It is subject to weather conditions without protection. Of course a display of unwrapped goods can look tempting, but more often broken and weather wearied pieces spoil the picture.

Great progress has been made in types and means of individual piece wrapping. Malted milk balls, watermelon slices, spearmint leaves, orange slices, peanut butter cups, licorice items, ball gum, marshmallow banannas or peanuts, chocolate drops, non-pareils, and many other pieces can be wrapped by machine. The chart accompanying this article shows the many different styles of wraps available and lists the machine manufacturers which can supply equipment for the different types of wraps.

The economy of piece wrapping depends on the

	BOTTOM FOLD	VIENNA BON BON	FOILING	SACHET	DOUBLE TWIST	BAND & FOIL	BUNCH	END FOLD	TUBE WRAP
CAMPBELL WRAPPER									✓
CARLE & MONTARI	✓	✓		✓	✓	✓		✓	
EUROMAC SAPAL	✓	✓	✓	✓	✓	✓	✓	✓	
FORGROVE	✓				✓		✓	✓	
OH HAENSEL		✓	✓	✓	✓	✓	✓		
HANSELLA									✓
IDEAL	✓								
RASCH			✓		✓	✓		✓	
ROSE	✓	✓	✓	✓	✓	✓	✓	✓	
SIG		✓	✓		✓	✓			
GD SUPERMATIC	✓	✓	✓	✓	✓	✓	✓	✓	

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Self-Locking SUPER cushion Cartons

Pack your candy Easter eggs in genuine egg cartons and watch sales jump out of the bulk class. You'll get better acceptance . . . bigger volume . . . sweeter profits per dozen when you pack in regular or miniature Self-Locking Super Cushion Cartons.

Stock or special designs, samples and prices available on request. Write, wire or phone.

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Complete mechanization available for volume users. Leased equipment with return privileges; write direct.

type of wrapped material and printing. However, one manufacturer offering marshmallows bananas in both wrapped and unwrapped pack adds a mere 3 cents to the jobber's price for the wrapped 120-count package. Another manufacturer has found that by wrapping the goods he can dump pack instead of layer pack thus saving time in filling and saving the cost of layer boards.

When you consider the impact that European count goods has made on the market in this country piece wrapping becomes a question of maintaining a competitive position. Foiled imported count goods are an important factor these days. Almost all of the imported penny items are wrapped and, in order to compete, the manufacturer must meet the competition on its own ground. Piece wrapping then becomes less a bid for the quality image it invokes and more of a necessary upgrading of product to meet the competition.

Penny candy has been declaimed as having virually disappeared from today's market. Eulogies have been written about the passing of the "good old days" when a child could go to the corner store with his penny and look over a tempting assortment of sweets.

The old day of unwrapped penny items may be over, but a new day of sanitary, versatile wrapped goods is just dawning. The progressive manufacturer, aware of packaging trends, is taking steps to eliminate an old problem with a new and profitable solution. Individual piece wrapping is reviving sales potential that was very nearly lost completely.

Investment Opportunity in France

Important French chocolate and confectionery manufacturer, well located in the center of the common European market, invites a financial connection with an American company. The firm has big annual sales, modern plant and an efficient commercial organization. The connection might be in the nature of an interest in the firm, or the manufacture of American lines for European distribution.

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500 CANDIES WRAPPED IN 1 MINUTE WITH AVISCO® CELLOPHANE

Cellophane is unmatched by any other packaging film for high speed machine performance. The twist wrapping of 500 candies a minute is just one example. What makes this possible? Cellophane is rigid and static-free. It feeds and forms perfectly. And, when a sealing operation is involved, it seals quickly and securely. What's more, cellophane's sparkling transparency creates greater sales appeal, and its freshness, flavor and aroma retention are superb.

Result—*total packaging economy*. We offer a complete packaging service to assist you and demonstrate how Avisco cellophane, plain or printed, will answer *your* requirements better and more economically than any other packaging material. Contact us for an appointment with our representative or a selected cellophane converter specializing in your field.

P.S. Avisco cellophane is low in cost. It takes only 15c worth to wrap 500 of the candies shown above.

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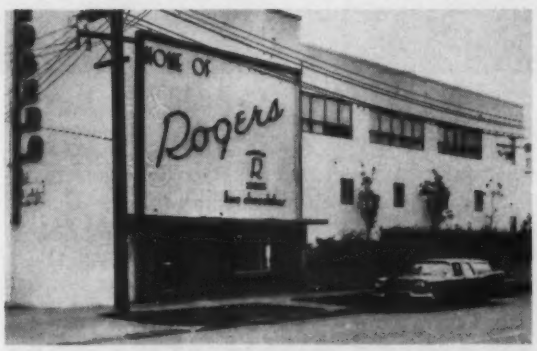
First the package . . . .

then the product

It's a bit unusual for a company to choose a container and then produce a product to put in it, but the Rogers Candy Company of Tacoma, Washington doesn't seem to think so. Alvin Brown, manager of the company which his father purchased in 1945, decided to add peanut brittle to his line after seeing a tub container particularly well-suited to this type of product.

Adapting a family recipe to production sized quantities, the company experimented with a trial order of 10,000 tubs and when after thirty days they had sold out, an additional 25,000 were ordered. Six years later this container-inspired product now represents a regular percentage of the company's production and the demand is so great that approximately 80,000 two-pound tubs are filled and sold annually.



Headquarters for Rogers candies is this modern plant which features a small retail store in the front of the building. The attractive window display, changed frequently, shows the variety of items which comprise the Rogers' line.

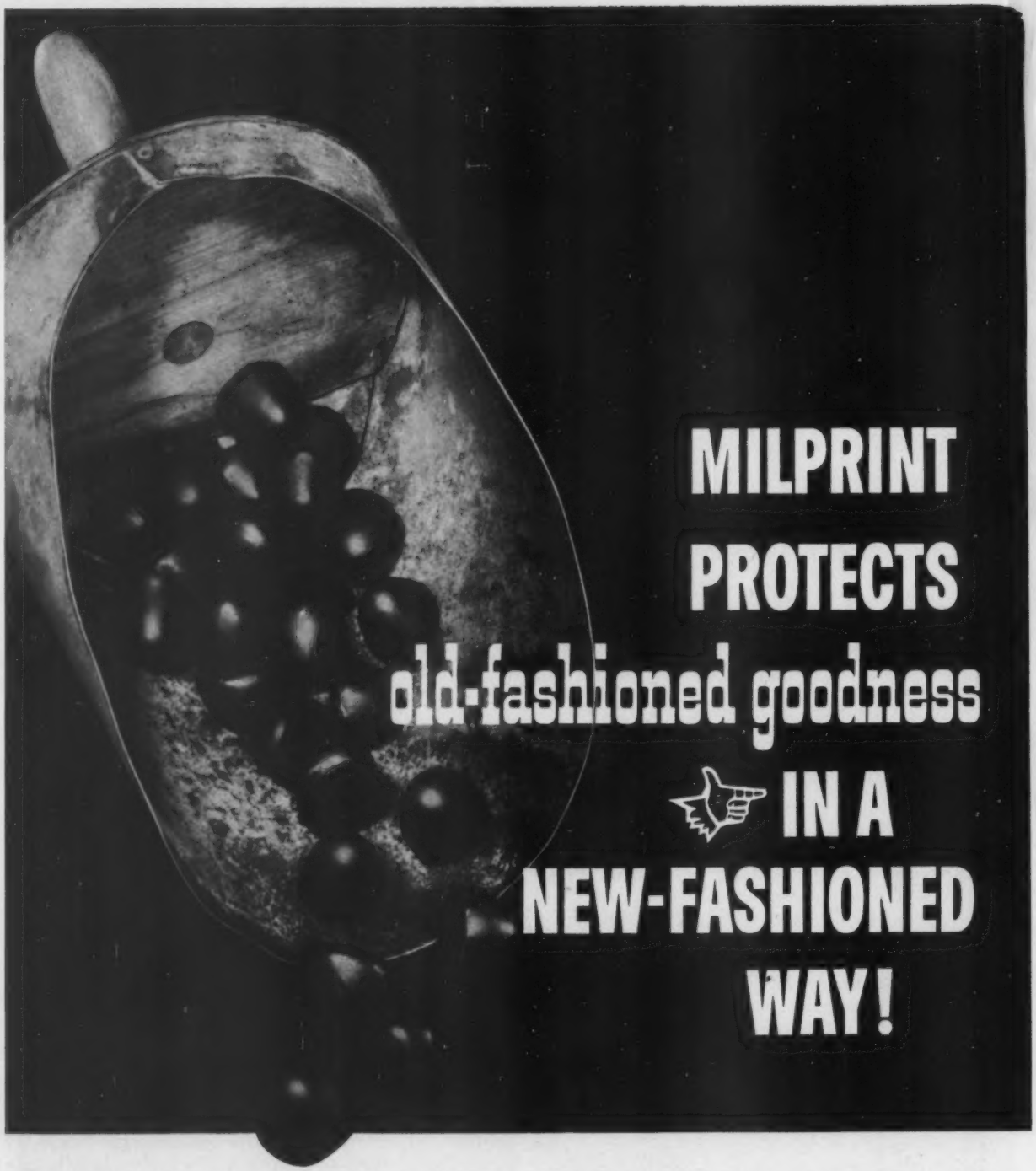
The extraordinary success of this product is attributed by Mr. Brown to six rules of operation which he believes are followed to the letter with respect to this particular product.

1. Use quality ingredients. This rule is number one at Rogers and extends to the variety of packaged chocolates which comprises the company's standard line.

2. Experiment. Following through on this rule, the company is now working on coconut-cashew brittle and salt water taffy also packed in the tubs.

3. Be a smart merchandiser. Packaging is primary in following this rule and Alvin Brown puts a great deal of thought into picking the proper package for each product (or vice versa, as in the case of the peanut brittle!). A year-round advertising program promotes the entire line and an annual promotional drive in May and June tops off the company's aggressive selling efforts.

4. Maintain good distribution. Rogers' products receive prominent display area in drug, department and variety stores in the three-state area of Alaska, Washington and Oregon and the line is also carried in military post exchanges throughout



From kettle to consumer, candy retains all its goodness in this new Milprint package. The Milprint custom combination of a polyethylene coating extruded to bond paper also offers a softer, more inviting "feel" of quality that creates impulse sales, brings candy customers back for more!

It's another example of Milprint's unique ability to furnish tailored-for-you package advantages at pick-'n'-mix prices. Get the widest choice of packaging materials and printing processes combined with a nationwide network of research, design and production facilities—and over 60 years of flexible packaging leadership. Call Milprint . . . soon!

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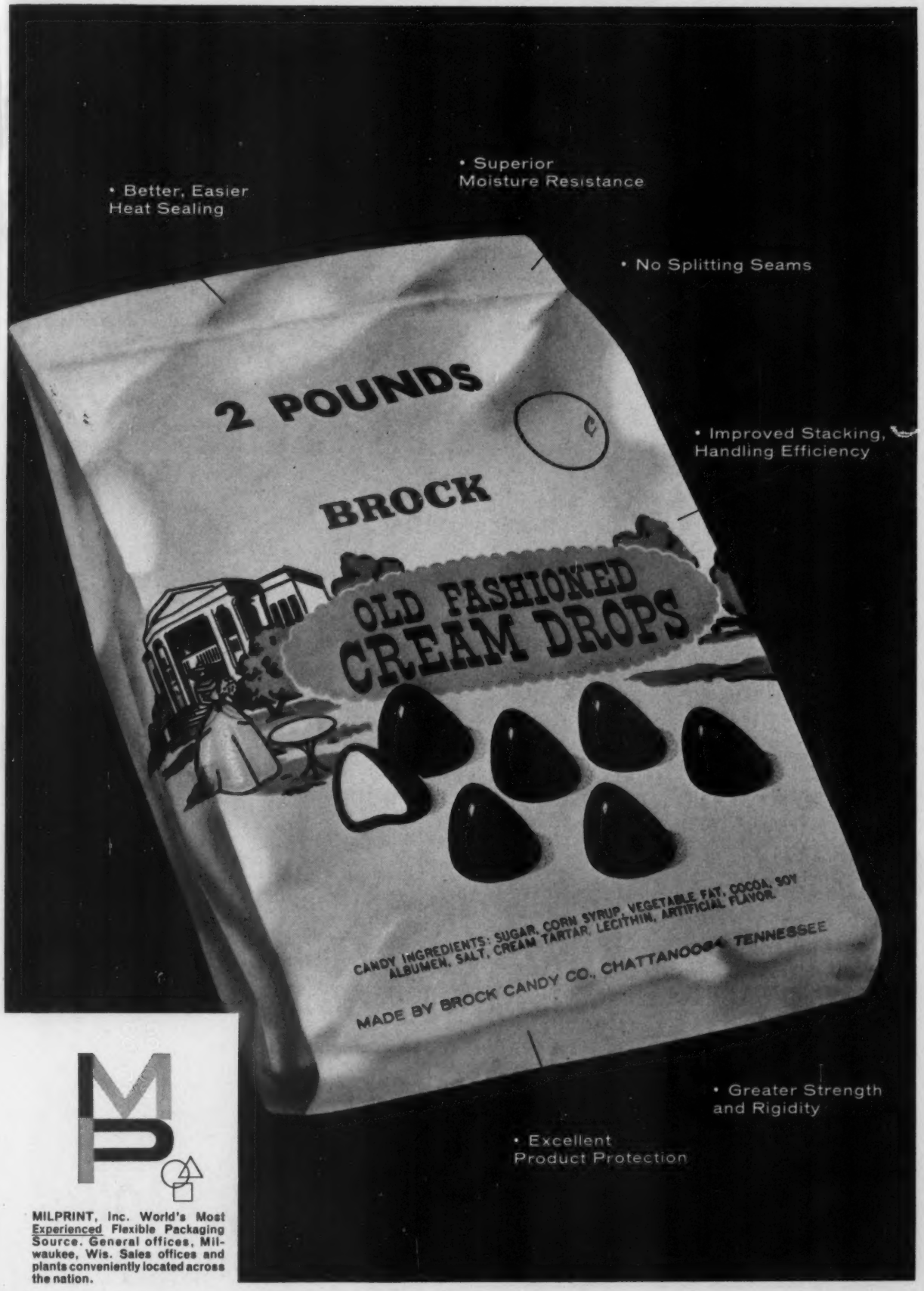
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P.S. Olin is helping to promote candy with an integrated advertising and merchandising program. So when you think of cellophane, think of Olin *first.*

OLIN MATHIESON
Packaging Division
655 Madison Avenue, New York 21, N. Y.

Rogers' employees pack their popular peanut brittle into the Lily-Tulip tubs which inspired production of this item.

the western states. His sales office is credited with carrying out this rule but accomplishes it through application of the next rule . . .

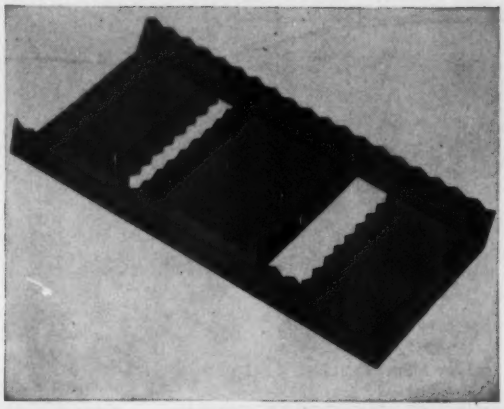
5. Foster team spirit. Firmly convinced that a dynamic sales force is imperative, Mr. Brown conducts an annual contest with inducements such as expense paid weekends at resort hotels. The production employees are happier working in the company's modern, new 22,000 square foot plant. A tightly knit organization, each of the 65 employees is given a definite feeling of "belonging" through Brown's personal interest and friendly consideration.

6. Work hard. Generous quantities of day after day hard work is the final leavening ingredient without which all of the other success-assuring factors would fail, Brown concedes. No shirker himself, he inspires the very best efforts from each of his employees.

And so, backed-up by strict observance of Mr. Brown's six steps to success the product produced for a package is tremendously popular. It stands as a fine example of imagination at work in packaging candy.

Alvin H. Brown, President of the firm which his family guided from a small, struggling candy company into a flourishing business within a 15 year period, stands in the retail store which fronts his new modern plant.

A Very Popular
SWEETONE PRODUCT



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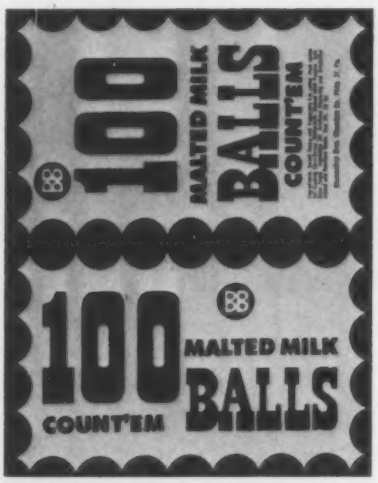
FAMILY

The Whitman's family of bag labels is a good example of tieing-in product identification with name brand identity. There's no missing the fact that each of these items are part of the Whitman line, but at the same time the individual products are adequately identified.



BILLBOARD

This unique Blumenthal Bros. bag top is of the billboard variety. Its size is used to advantage to call attention to the number of candies in the package. This particular label is designed so that the package will lie flat with the bag running parallel to the display shelf or can be used on a display rack in a standing position.

HEAD TO HEAD

Powers Candy Company has this bag top designed in the most common style in use today. Called the head to head style, it is primarily used for rack hanging or on displays where the bag is kept in an upright position.

HEAD TO FOOT

This Holloway label, termed head to foot, allows the bag to be stood up or to lie flat with the label at the edge of the shelf, the inside of the shelf, or with the label sideways.

Bag Label Tren

As in other areas of packaging, bag labels are changing with the times. There is now a wide variety of sizes and styles from which a manufacturer may choose the type which best suits each of his products.

Label design is still, of course, a highly individual matter, and will be a problem as long as there are labels. Consider what the label must do: stop the shopper, inform as to contents, present a picture of quality, and conform with government regulations. Yet it should not be too cluttered or "busy".

Marketing situations usually tend to resolve questions such as the emphasis to be placed on brand names, and sometimes the type of trade will dictate the arrangement of the label based on how the bag will usually be placed on display.

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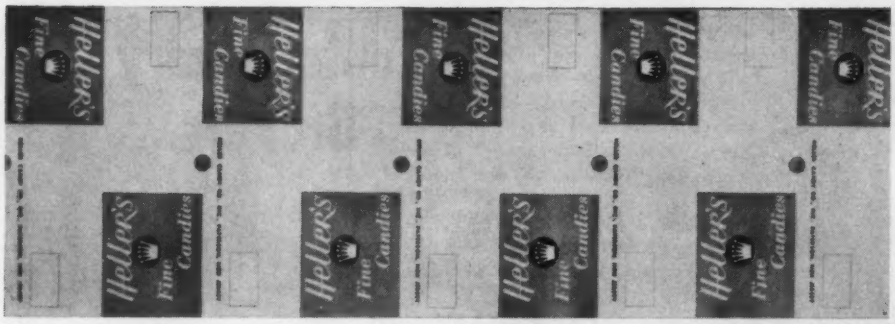


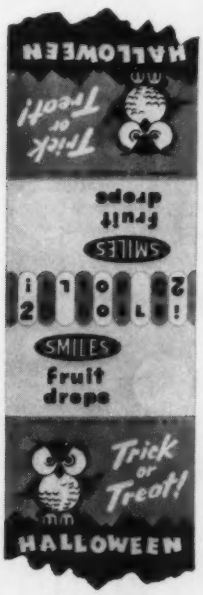
ROLL STOCK LABELS

This Heller bag top is delivered blank in rolls so that it can be fed through an imprinter giving 100% control of inventory and eliminating label obsolescence. Many bag making machines are now set up to apply labels from roll stock as the bag is made. Thus, in many cases, bag making, labelling, filling and sealing can be part of a completely automated line.

eTrends

Of course the volume of production has a great effect on label design. Not only does it influence the printing and paper stock considerations, but volume dictates what types of equipment can be used on the packaging lines.

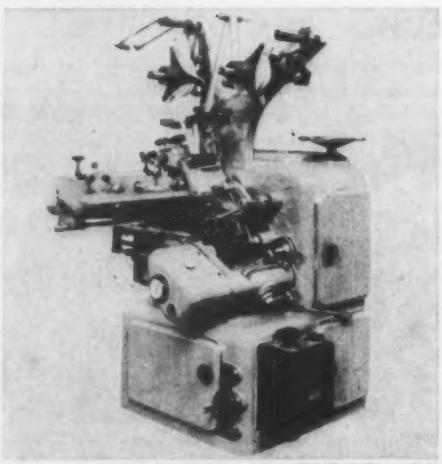
The design and printing of candy bag labels has become such a large business that confectionery manufacturers can turn to a number of well experienced firms in the field. Consequently there are not as many unprofessional looking labels about as there once were. Most labels today have quality art work and fine printing compared with the old-time labels which looked as if they were just set in type and run off in a small, local print shop, as, indeed, they often were.



SEASONAL

Seasonal tear-offs are becoming increasingly important and, in fact, are a necessity if left-over stock promoted for a holiday is to be sold. The most popular tear-off tags are for Halloween with Christmas, Easter and Valentine's Day following. Some effort has been made to use the tear-off to promote other holidays, such as Sweetest Day, but despite the enormous popularity of the better known holiday tear-offs, these attempts have met with little success.

GD Supermatic



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40,000 per 7 hour day. 5¢ or 10¢ size.

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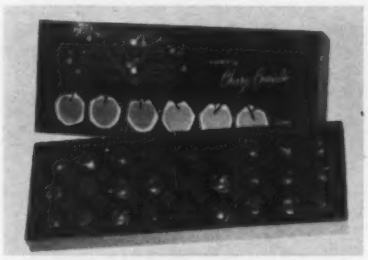
New Packages



Loft Candy Corp. is using a custom-molded tray for its new Cherry Cordials package. The polyvinyl plastic tray is used with a standard over-wrapped set-up box, filled by hand on regular production lines. The tray is red for maximum eye-appeal when open packages are displayed.

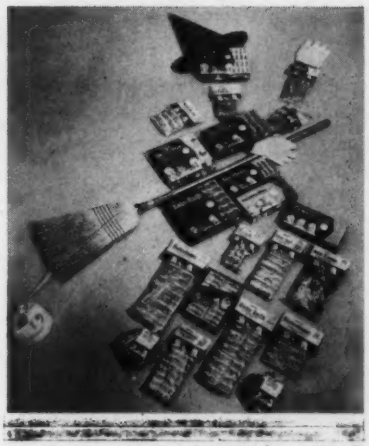
Luden's, Inc. has brought out a new bar called "Brigadoon". The center is peanut butter crunch, similar to Luden's 5th Avenue bar, but the coating is butterscotch. The bar is wrapped in opaque Glassine printed, flexographically, in yellow and red with a plaid motif.

Fleer has redesigned their "Mr. Halloween" design for use on their 80-count package of Dubble Bubble Gum. The cartoon-type character has been given more of a little boy look and the entire package has been overhauled featuring the new Dubble Bubble trademark on every panel. The **Parents'** magazine Seal of Approval has been given a prominent spot on the front of the package.

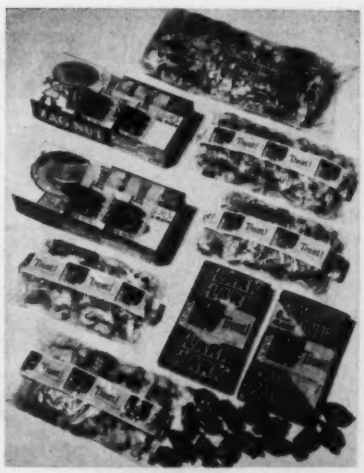
American Chewing Products Corp. has introduced "Outer Space —The Big O Bubble Gum" in chain stores and supermarkets throughout the country. Packaged in a double cellophane Saran-coated bag one-third of the contents are wrapped in aluminum foil for added sales appeal. The heat-sealed header label features red, white and blue rockets, satellites and other space objects. A special Halloween header will be used for fall sales.

Chiclecraft, Inc. has brought out Sugarless Mints in one-half oz. rolls of 12, wrapped in gold aluminum foil with a lithographed paper sleeve. Available in seven flavors: peppermint, lemon, orange, berry, cherry, lime and butterscotch, the mints are being promoted to the calorie conscious candy lover and are being distributed by Estee Dietetic Sales Co., New York City.

The Chocolate House is packing their heavy-dipt Marshmallow Eggs in two layers of plastic trays, 36 eggs to a box. The newly designed package is purple and gold and the trays hold the eggs in a manner similar to dairy egg trays. A companion box of Chocolate House Whipped Creme Eggs is now packed in these same trays but are packed 12 to a box.



Curtiss Candy Company is concentrating on immediate brand recognition in the packaging of their 21 Halloween items. All of their packages have the seasonal overwrap printed in brilliant colors in addition to the conventional Halloween black and orange and all packages are convertible to regular, non-seasonal merchandise. Two new items, assorted flavor miniature Circlets and Vanilla Caramels, are included in the Curtiss 1960 Halloween line. Both are packed in polyethylene bags.



D. L. Clark Company is introducing a 36-ounce "trick or treat" package of Peanut Blossom Kisses as part of their 1960 Halloween promotion. All Clark products featured in the seasonal promotion will carry colorful Halloween overwraps which can be removed later so that excess stock can be sold. Point-of-purchase posters and dump bins will promote the 10, 16 and 36 ounce bags of Peanut Blossom Kisses, 24-count boxes of Clark and Zag Nut bars, six-pack boxes of the

two bars, 10-ounce bags of Clarkie Molasses Kisses and Assorted Continental Caramels, and approximately 240-count boxes of Pure Molasses Caramels.

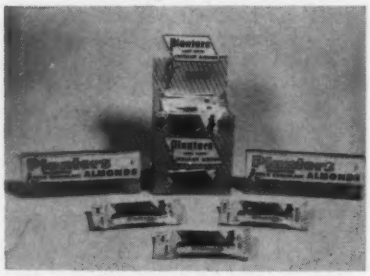
Mason au & Magenheimer is packaging their boxed Mason Mints, Almond Cocoanut, Walnut Fudge and Assorted Jelly Candies in molded, chocolate-colored trays. The use of this single tray is said to speed assembly within the set-up box and permits faster loading.

Thos. D. Richardson Co. is introducing specialty packages of After Dinner Mints for distribution in theatres. The theatre package is

pre-priced to retail at 15 cents and will be available in two packs—midget white mints and midget assorted mints, a mixture of yellow, green, pink and white.

Spangler Candy Company is shipping 72 10-oz. bags of 1¢ Dum-Dum lollipops in a multicolored shipper realistically designed to resemble

a "Thin Wall" television set. The display unit calls attention to a premium offer of a giant world map. A colored sign packed inside the shipper describes the map and completes the self-service display stand.



Planters' summer line of candy coated nuts now includes Planters' Candy Coated Chocolate Almonds available in cellophane bags and window-front boxes. 10¢ bags are available in 24-count open-face display boxes designed for counter top impulse sales and 100 count cartons for vending machines. The window-front boxes are being promoted for drug and grocery store sales.

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New Broker Appointments

The annual Directory of Candy Brokers lists several hundred candy brokers and the manufacturers they represent. Listed below are recent changes showing the manufacturers and the newly appointed broker.

Arcady Confections, San Fernando, Calif.
Harold J. Cook, Park Ridge, Ill.

Paul F. Beich, Bloomington, Ill.
Jack Brown Co., Fort Worth, Texas

Bobs Candies, Albany, Ga.
Vranicar Brokerage, Denver, Colo.

Boyer Bros., Altoona, Penna.
Wolverine Assoc., Detroit, Mich.

Breakers Confections, Chicago, Ill.
James A. Wear Assoc., Ballinger, Tex.

Charlotte Charles, Evanston, Ill.
Bert L. Swain, New Orleans, La.

D. L. Clark Co., Pittsburgh, Penna.
Jack Brown Co., Fort Worth, Texas
C. Eugene Wilbourn, El Paso, Texas

Colonial Candy Co., Rochester, N. Y.
A. Morton Mosher, Dallas, Tex.

Dryden & Palmer, Long Island City, N .Y.
Harry Richter, New York, N. Y.

Duncan's (Imported)
R. H. Taylor, Lexington, Ky.

Dye Candy Co., St. Louis, Mo.
Twin States Sales, Columbus, Ohio

Fine Products, Sweetly Yours Div., Augusta, Ga.
Paul G. Turner, Washington, D. C.

Fox Cross Candy Co., Everett, Mass.
R. H. Taylor, Lexington, Ky.

King Candy Co., Ft. Worth, Texas
J. A. Knox, Arlington, Texas

King Kandy Kane, Bronx, N. Y.
Buhrer Brokerage, Davenport, Iowa

Leader Candy Co., Brooklyn, N. Y.
J. A. Know, Arlington, Texas

Merrill Candy Co., Merrill, Wisc.
Ben Burkhardt, Mission, Kansas

Milko Products, Chicago, Ill.
Harry Richter, New York, N. Y.
James A. Wear, Ballinger, Texas

Charles A. Peterson Co., Cleveland, Ohio
John K. Barbour, Pittsburgh, Penna.

Philadelphia Chewing Gum, Philadelphia, Penna.
Northwest Brokerage, Seattle, Wash.

Queen Anne Candies, Hammond, Ind.
Ben Burkhardt, Mission, Kansas

Smith Brothers Co., Poughkeepsie, N. Y.
A. W. Fodor, Cleveland, Ohio

Switzer's Licorice Co., St. Louis, Mo.
A. W. Fodor, Cleveland, Ohio

Vernell's Buttermints, Seattle, Wash.
Wieland-Cohoon Inc., St. Louis, Mo.

The 1960 Directory of Candy Brokers, classified by the territories covered by the brokers, is included in The Candy Buyers' Directory and is available at the publishing office for $5 per copy.

CALENDAR

August 21-24; Sixth annual National Fancy Food and Confection Show, Hotel Astor, New York City.

August 28-31; Boston Candy Show, Staler Hotel, Boston, Massachusetts.

September 4-6; 3rd Annual International Confectionery Show, Parc des Expositions, Paris, France.

September 19-21; Philadelphia National Candy Show, Benjamin Franklin Hotel, Philadelphia, Pa.

September 20; New York Candy Executives Club, offshore dinner, 6:00 PM., The Latin Quarter, New York City.

October 29-November 1; National Automatic Merchandising Association, convention and exposition, Miami Beach Auditorium and Exhibition Hall, Miami, Fla.

December 15-16; Western Confectionery Salesmen's Association, annual meeting, LaSalle Hotel, Chicago, Illinois.

1961

November 7-10; Packaging Machinery Manufacturers Institute, 1961 trade show, Cobo Hall, Detroit, Michigan.

May 2-9; Macropak, Sixth International Packaging Exhibition, R.A.I. Exhibition Halls, Amsterdam, Holland.

CANDY PACKAGING AND MARKETING

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AUGUST Vol. 29, No. 4 **1960**

New super-tough Du Pont "K"* cellophane 600 keeps Strongin candy fresher...packages neater

Strongin & Sons, Chicago, uses two Du Pont cellophanes to give its candy canes top visibility, sales appeal and protection. Extra-tough "K"* cellophane, type 600, keeps the single-wall bags neat and fresh-looking, even through the heat, cold and rugged handling encountered by seasonal items. And MSD-35 cellophane wraps on each cane prevent piece-to-piece sticking. See how you, too, can package more profitably with Du Pont cellophane. Talk to your Du Pont Representative or Authorized Converter. Du Pont Co., Film Department, Wilmington 98, Delaware.

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...THROUGH CHEMISTRY

DU PONT cellophane

Continued from page 24

slopes, the data of *Lichtenstein, MacLeod* and, particularly, *Schutz* and *Pilgrim* stand quite apart. It is also clear that there is a wide divergency in threshold values, and it would seem that both high and low values might be correct, depending upon the circumstances. High relative sweetness values in low concentrations are apparently found when dextrose is evaluated in itself, while low values are obtained as the result of matching dextrose and sucrose solutions. There is no doubt that it is impossible to assign a specific sweetness value to dextrose for all purposes.

At first sight it is nearly impossible to obtain reliable average values for the relative sweetness of dextrose from the data in tables 1 and 5. However, when early data are discarded because they are not based upon exact experiments but are rather rough estimates, it appears that mean values calculated from the seven curves of figure 1 result in the smooth curve A representing average sweetness values at different concentrations. Some of these average values have been summarized in table 6.

Table 5.—Relative sweetness of dextrose (pure glucose, solids basis), of varying concentration.

Investigators	Concentration	Relative sweetness
66. Sjostrom & Cairncross (1955)	2.8%	53.6
67. Schutz and Pilgrim (1957)	3.0%	68
68. Dahlberg and Penczek (1941)	3.2%	62.5
69. Cameron (1943, 1944)	3.8%	52.6
70. Schutz and Pilgrim (1957)	4.0%	60
71. MacLeod (1952)	4.3%	44.2
72. Schutz and Pilgrim (1957)	5.0%	56
73. Sjostrom & Cairncross (1955)	5.5%	58.2
74. Schutz and Pilgrim (1957)	6.0%	54
75. Schutz and Pilgrim (1957)	7.0%	53
76. Dahlberg and Penczek (1941)	7.2%	69.4
77. Turnbow et al (1949)	7.4%	67.7
78. Schutz and Pilgrim (1957)	8.0%	53
79. Sjostrom & Cairncross (1955)	8.0%	62.5
80. Renner (1939)	8.0%	53
81. MacLeod (1952)	8.1%	60.5
82. Cameron (1945)	8.3%	60.2
83. Schutz and Pilgrim (1957)	9.0%	54
84. Schutz and Pilgrim (1957)	10.0%	54
85. Schutz and Pilgrim (1957)	10.5%	55
86. Sjostrom & Cairncross (1955)	10.9%	66.9
87. MacLeod (1952)	12.3%	77.2
88. Dahlberg and Penczek (1941)	12.7%	78.7
89. Turnbow et al (1949)	13.3%	75.4
90. Sjostrom & Cairncross (1955)	13.5%	71.8
91. Cameron (1943, 1944, 1945)	14.6%	68.5
92. Schutz and Pilgrim (1957)	15.0%	61
93. Lichtenstein (1948)	15.5%	65
94. Sjostrom & Cairncross (1955)	16.2%	72.8
95. Dahlberg and Penczek (1941)	17.2%	87.2
96. Turnbow et al (1949)	17.8%	84.2
97. Sjostrom & Cairncross (1955)	18.9%	75.2
98. Schutz and Pilgrim (1957)	20.0%	66
99. Eickelberg (1940)	20.0%	75
100. Cameron (1944)	20.1%	74.7
101. Sjostrom & Cairncross (1955)	21.7%	77.4
102. Dahlberg and Penczek (1941)	21.8%	91.7
103. Turnbow et al (1949)	22.9%	87.4
104. MacLeod (1952)	24.0%	95.9
105. Cameron (1943, 1944)	25.0%	80
106. Dahlberg and Penczek (1941)	27.5%	90.9
107. Turnbow et al (1949)	27.6%	90.7
108. Schutz and Pilgrim (1957)	30.0%	77
109. Dahlberg and Penczek (1941)	31.5%	95.2
110. Renner (1939)	35.0%	88
111. Lichtenstein (1948)	35.5%	71
112. Schutz and Pilgrim (1957)	40.0%	97
113. Dahlberg and Penczek (1941)	40.0%	100
114. Eickelberg (1940)	40.0%	100
115. Lichtenstein (1948)	48.1%	83
116. Eickelberg (1940)	50.0%	100
117. Dahlberg and Penczek (1941)	50.0%	100

Table 6.—Average relative sweetness of dextrose as affected by concentration.

Concentration	Relative sweetness
1%	45½
2%	50
5%	58
10%	66
15%	72½
20%	78
25%	82
30%	86
35%	90
40%	93½
45%	97
50%	100

Thus, in 50 per cent concentration dextrose has the same sweetening power as sucrose, whereas in very diluted solutions its relative sweetness is only half. As compared with a standard sucrose solution of 10 per cent, the average relative sweetness of dextrose (14 per cent concentration) is 71, 5.

Sweetness of glucose syrup in varying concentrations.

In contradistinction to the report by *Paul* (1921), stating that the relative sweetness of glucose syrup did not vary in the concentration range 6 to 30 per cent, *Dahlberg and Penczek* (1941) and other investigators have demonstrated that for glucose syrup, too, the relative sweetness increases with increasing concentration. The available data from the literature have been summarized in table 7 and in figure 2.

For glucose syurps of medium conversion (D.E. = 42) and high conversion (D.E. = 64), mean values have been calculated from the available data of table 7, and curves representing these averages

Table 7.—Relative sweetness of glucose (starch sirup, solids content), in varying aqueous solutions.

Investigators	Conc. of solids	Relative sweetness
118. Sjostrom & Cairncross (1955)	5.0%	30 (a)
119. Dahlberg and Penczek (1941)	7.0%	28.5(a)
120. Sjostrom & Cairncross (1955)	10.0%	32 (a)
121. Turnbow et al (1949)	13.3%	38 (a)
122. Sjostrom & Cairncross (1955)	15.0%	35.3(a)
123. Dahlberg and Penczek (1941)	15.7%	31.8(a)
124. Sjostrom & Cairncross (1955)	20.0%	36.5(a)
125. Sjostrom & Cairncross (1955)	22.0%	37.5(a)
126. Turnbow et al (1949)	22.2%	45 (a)
127. Sjostrom & Cairncross (1955)	25.0%	38.8(a)
128. Dahlberg and Penczek (1941)	25.1%	39.8(a)
129. Turnbow et al (1949)	30.0%	50 (a)
130. Sjostrom & Cairncross (1955)	30.0%	39.4(a)
131. Dahlberg and Penczek (1941)	33.3%	45 (a)
132. Sjostrom & Cairncross (1955)	35.0%	40.6(a)
133. Turnbow et al (1949)	35.6%	56 (a)
134. Turnbow et al (1949)	39.2%	64 (a)
135. Sjostrom & Cairncross (1955)	40.0%	42 (a)
136. Dahlberg and Penczek (1941)	42.3%	47.3(a)
137. Dahlberg and Penczek (1941)	51.0%	49 (a)
138. Dahlberg and Penczek (1941)	55.0%	54.5(a)
139. Turnbow et al (1949)	10.4%	48 (b)
140. Turnbow et al (1949)	18.4%	54 (b)
141. Turnbow et al (1949)	24.3%	62 (b)
142. Turnbow et al (1949)	28.9%	69 (b)
143. Turnbow et al (1949)	33.7%	74 (b)
144. Dahlberg and Penczek (1941)	5.0%	40 (c)
145. Turnbow et al (1949)	9.8%	51 (c)
146. Dahlberg and Penczek (1941)	10.4%	48.1(c)
147. Turnbow et al (1949)	16.4%	61 (c)
148. Dahlberg and Penczek (1941)	17.9%	55.9(c)
149. Turnbow et al (1949)	22.0%	68 (c)
150. Dahlberg and Penczek (1941)	23.2%	64.7(c)
151. Turnbow et al (1949)	26.1%	77 (c)
152. Dahlberg and Penczek (1941)	28.2%	70.9(c)
153. Turnbow et al (1949)	30.2%	83 (c)
154. Dahlberg and Penczek (1941)	35.0%	71.4(c)
155. Dahlberg and Penczek (1941)	41.0%	73.2(c)
156. Dahlberg and Penczek (1941)	50.0%	80 (c)

a) Confectioners' corn syrup and corn syrup solids, D.E. = 42 — 42.5.

b) High conversion syrup, acid-converted, D.E. = 55.

c) High conversion syrup, enzyme-converted, D.E. = 63 — 64.5.

have been drawn in figure 2. Table 8 also summarizes the average sweetness values of glucose syrups of medium and high conversion. It appears that in comparison with a 10 per cent standard solution of sucrose, glucose syrup of medium conversion (D.E. = 42) has a relative sweetness of 41 (at a concentration of approximately 24.5 per cent), whereas glucose syrup of high conversion (D.E. = 64) has a relative sweetness of 59 (at 17 per cent concentration).

Table 8.—Average relative sweetness of glucose syrups as affected by concentration.

Concentration	Relative sweetness	
	D.E. = 42	D.E. = 64
5%	30½	42
10%	33	49
15%	36	56
20%	39	63½
25%	41½	69½
30%	44	75½
35%	47	81
40%	50½	85
45%	54	89
50%	58	91

The ratios between the sweetness values of high and medium conversion starch syrups, caluculated for each concentration level, vary between 1,4 and 1,7. The average ratio, 1,55, corresponds nicely with the ratio (1,52) of the two conversion degrees. It can be stated, therefore, that the relative sweetness of glucose syrup in each concentration is approximately proportional to the degree of conversion, as measured by dextrose equivalent. The relative sweetness of a glucose syrup of any given conversion degree may thus be approximated by proportional interpolation between the values of table 8 according to the ratios conversion values. As an example, the relative sweetness of a glucose syrup of D.E. = 55 in 20 per cent solids concentration is theoretically estimated to lie between 55/42. 39 = 51 and 55/64. 63½ = 55, averaging a value of 53. This fits reasonably well with the value 55.5 for this concentration as given by the curve for glucose syrup of D.E. = 55 in figure 2, though apart from that this curve should be considered atypical.

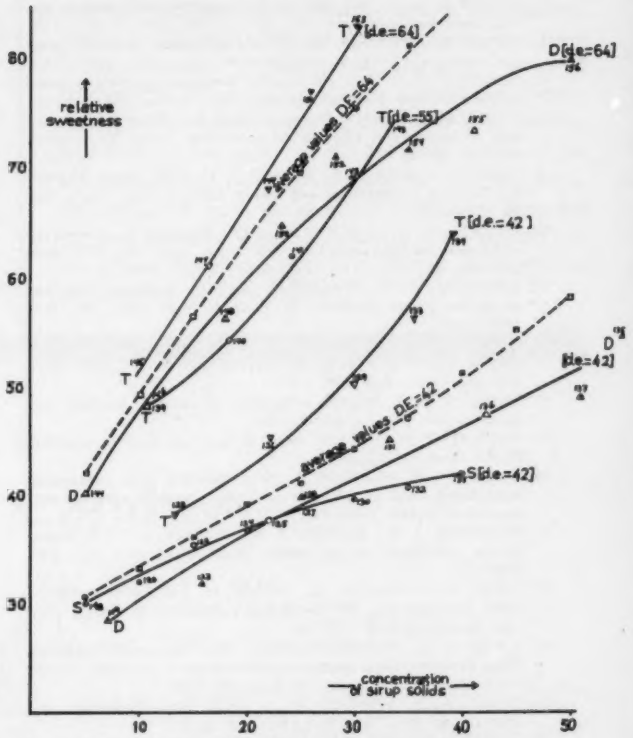

fig. 2. Relative sweetness of glucose sirup in various concentrations

Summary

Today, highly refined and well-standardized starch hydrolysis products serve as functional and essential raw materials in the production of a large variety of food items. Their original use, however was solely to replace cane sugar as a sweetening agent. Consequently, both glucose syrup and dextrose have long been regarded as inferior substitutes for sucrose, the more so since early estimates of their relative sweetness gave rather low values. Presently many food regulations in several countries still lean heavily in favor of sucrose as an exclusive sweetener, despite the fact that from a nutritional as well as a technological standpoint, starch hydrolysis products are definitely not inferior.

Many data on the relative sweetness of dextrose, still retained in the literature, must be considered as obsolete. In the light of more recent experiments it should be appreciated that it is impossible to assign specific sweetness values to glucose syrup or dextrose for all purposes. It appears that the sweetness of starch hydrolysis products, as compared with sucrose, is markedly enhanced by at least two factors, namely, increasing concentration and the simultaneous presence of sugar. Thus, both glucose syrup and dextrose can under certain conditions be as sweet as, or even sweeter than sucrose.

In pure solutions and in the 5 to 50 per cent solids concentration range, the relative sweetness of medium and high conversion glucose syrup and dextrose roughly varies between, respectively, 30-60, 40-90, and 60-100. As compared with an isosweet 10 per cent sucrose solution, glucose syrups of medium and high conversion have a sweetness of, respectively, 41 and 59, whereas dextrose is 71.5 per cent as sweet as sucrose. In admixture with sucrose, the relative sweetness of starch hydrolysis products varies between 57-100 for medium conversion glucose syrup, 79-100 for high conversion syrup, and 90-100 for dextrose.

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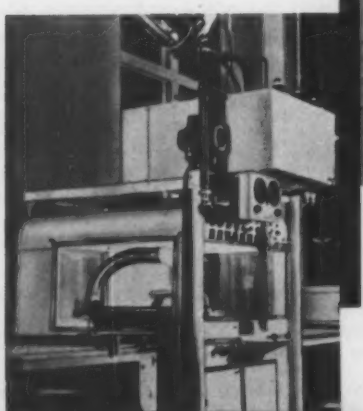
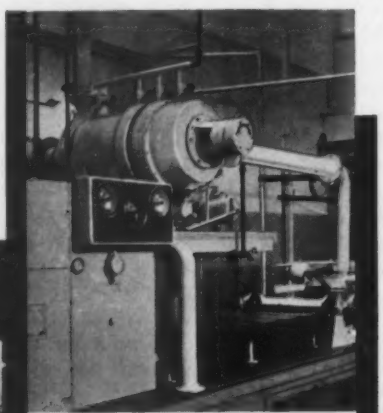
Type TA XIII

Capacities up to 1100 lbs/h. The picture below shows the tempering machine installed on a Coater.





Type TA III

Capacities up to 4000 lbs/h. The tempering machine shown above is installed on a fully automatic Moulding Installation.

Fully automatic Tempering Machines
Types TA III & TA XIII

Ideal design of cooling, mixing, heating and stabilizing sections to obtain a well-tempered chocolate of the monomolecular crystallization giving a glossy product of long shelf life.

Economic operation with low water consumption.

No attention required when set for continuous operation.

Easy installation immediately where tempering of chocolate is required, avoiding long pipe lines and consequent interference in the tempering obtained.

Separate location of control panels.

MIKROVÆRK A/S

JENSEN

American Branch Office: Mikrovaerk (Canada) Ltd., 90, Advance Road, Toronto 18, Ont. Telephone: BELmont 1-2259

The MANUFACTURING CONFECTIONER'S

Candy Clinic

The Candy Clinic is conducted by one of the most experienced superintendents in the candy industry. Some samples represent a bona-fide purchase in the retail market. Other samples have been submitted by manufacturers desiring this impartial criticism of their candies, thus availing themselves of this valuable service to our subscribers. Any one of these samples may be yours. This series of frank criticisms on well-known branded candies, together with the practical "prescriptions" of our clinical expert, are exclusive features of The MANUFACTURING CONFECTIONER.

Summer Candies

Code 8X60
Summer Assortment
1 lb.—$1.50

(Sent in for analysis)

Appearance of Package: Dull
Container: Oblong box, one layer type. White embossed paper top, name printed in brown. Cellulose wrapper.
Appearance of Box on Opening: Good. All pieces are dipped in white summer coating.
Number of Pieces: 31
Gold Foil Cups: 2
Coating:
Color: Good
Gloss: Good
Strings: Good
Taste: Good
Centers:
Vanilla Caramels: Good
Hard Candy Chip Cluster: Good
Nut Nougat: Good
Honeycomb Chip: Good
Orange Cream: Good
Dark Nut Cream: Could not identify flavor.
Coconut Paste: Good
Pink Cream: Poor flavor
Hard Candy Chocolate Cinnamon Blossom: Good
Vanilla Cream: Good
Molasses Peanut Butter Blossom: Good
Coconut Cluster: Good
Molasses Chew: Good
Peanut Cluster: Good
Butter Crunch: Good
Cordial Cherry: Good
Foil Cups Solid Coating: Good
Assortment: Good
Remarks: Highly priced at $1.50 the pound. Suggest a light pink or green cup be used to improve the appearance of box when opened. A pink or green divider would also help the appearance on opening.

Code 8Y60
Assorted Gum Strings
½ lb.—40¢

(Purchased in a retail candy shop, Philadelphia, Pa.)

Appearance of Package: Fair
Container: Folding tray, overall cellulose wrapper. White board sleeve printed in red. Paper wrapper, overall print of name in black.
Strings:
Colors: Good
Texture: See remarks.
Flavor: Fair
Sugaring: Good
Remarks: Suggest flavors be checked up as they were not up to standard. Highly priced at 40¢ the half pound. Texture was more like jelly than a gum string.

Code 8P60
Fruit Jellies
11½ ozs.—79¢

(Purchased in a retail candy shop, Philadelphia, Pa.)

Appearance of Package: Good
Container: Oblong box, one layer type. White glazed paper top printed in pink, yellow and blue. Imprint of fruits in colors. Cellulose wrapper.
Appearance of Box on Opening: Good
Number of Pieces: 32 pieces of white sugar coated jellies.
Coating: Good
Centers:
Colors: Good
Texture: Good
Flavors: Good
Remarks: The best jellies of this type we have examined this year.

Code 8R60
Assorted Summer Candies
1 lb.—$1.25

(Purchased in a department store, Philadelphia, Pa.)

Appearance of Package: Good
Container: Oblong box, one layer type. White glazed paper top embossed in colors. Imprint of flowers in colors. Cellulose wrapper.
Appearance of Box on Opening: Good
Assorted Gum Wafers: Good
Nut Nougats: Good, cellulose wrappers.
Jelly Rings: Good
Gum Strings: Good

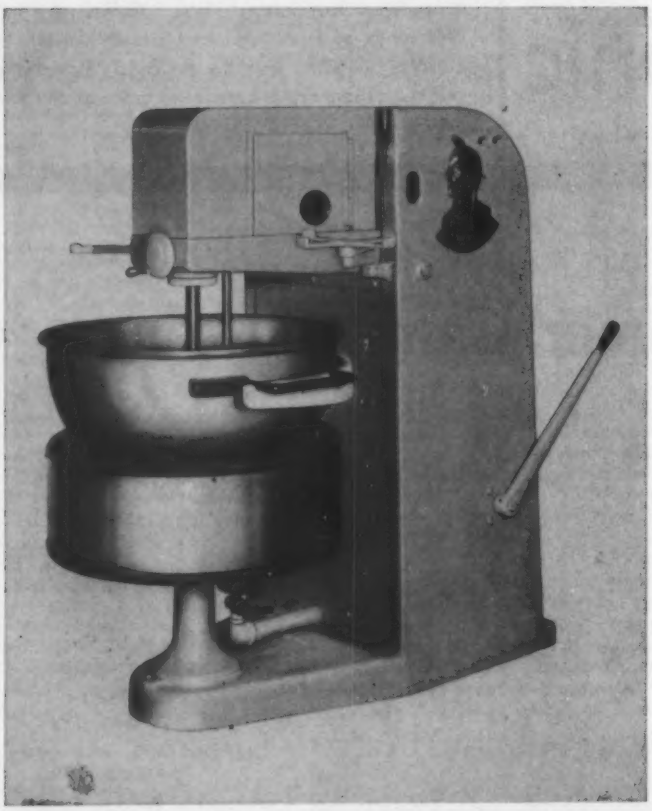
Candy Clinic Schedule For the Year

JANUARY—Holiday Packages; Hard Candies
FEBRUARY—Chewy Candies; Caramels; Brittles
MARCH—Assorted Chocolates up to $1.15
APRIL—$1.20 and up Chocolates; Chocolate Bars
MAY—Easter Candies; Cordial Cherries
JUNE—Marshmallows; Fudge
AUGUST—Summer Candies
SEPTEMBER—Uncoated & Summer Coated Bars
OCTOBER—Salted Nuts; Gums & Jellies
NOVEMBER—Panned Goods; 1¢ Pieces
DECEMBER—Best Packages and Items of Each Type Considered During the Year.

SAVAGE LATEST FIRE MIXER

MODEL S-48

Thermostatic Gas Control—Variable Speed



The Savage Latest Fire Mixer, Model S-48, is Streamlined and Sanitary and has many new features and conveniences:

Automatic Temperature Control
Variable Speed from 30 to 60 RPM
Break-back within floor space 32" x 48"
Aluminum Base and Body Castings
Atmospheric Gas Furnace with Stainless shell
Removable Agitator, single or double action
Stainless Cream Can and Stainless Drip Pan
Copper Kettle 24" diameter 12½" deep or 16" deep

You can save labor and obtain uniform batches by setting the thermostat for degree cook desired. It cooks and mixes batches of caramel, peanut brittle, peanut candies, fudge, nougat, gum work, and with double action agitator is ideal for coconut candies and heavy batches.

Your inquiry invited

SAVAGE BROTHERS COMPANY

2638 Gladys Ave. Chicago 12, Ill.

Assorted Caramels: Good, cellulose wrappers.
Caramel & Nougat: Good, cellulose wrapper.
Assorted Summer Coated Pieces: Good
Assortment: Good
Remarks: Very good summer candies. Slightly high priced at $1.25 the pound.

Code 8Q60
Summer Mint Candies
1 lb.—95¢

(Purchased in a retail candy shop, Philadelphia, Pa.)

Appearance of Package: Good
Container: Oblong box, one layer type. White glazed paper top printed in green and gold. Imprint of spray of mint in color. White paper wrapper, overall print of name etc. in gold.
Appearance of Box on Opening: Good
Crystal Bon Bons: Good
Cream Wafers: Good
Jelly Strings: Good
Jelly Operas: Good
Mint & Marshmallow Jelly Squares: Good
Jelly Wafers: Good
Molasses Chews: Good, cellulose wrappers.
Grained Sugar Sticks: Good, cellulose wrappers.
Hard Candy Cuts: Good, cellulose wrappers.
Gum Drops: Good
Assortment: Good
Remarks: Colors, flavors and texture of all pieces are good. The best box of this kind we have examined this year. Very neat and attractive packing. Should be a good seller at 95¢.

Code 8F60
Marshmallows
10 ozs.—23¢

(Purchased in a food shop, Chicago, Ill.)

Appearance of Package: Good
Container: Polyethylene bag, printed in red, yellow and blue. Attractive bag for marshmallows.
Marshmallows:
Color: Good
Texture: Good
Flavor: Good
Remarks: One of the best marshmallows we have examined this year.

Code 8G60
Chocolate Pecan Fudge
1 lb.—$1.00

(Purchased in a food shop, Chicago, Ill.)

Sold in Bulk:
Fudge:
Color: Good
Texture: Good
Pecans: Good
Taste: Good
Remarks: A very fine eating chocolate nut fudge. One of the best we have examined this year. Very well made and good eating.

Code 8U60
Jelly & Marshmallow Pieces
8 ozs.—49¢

(Purchased in a food shop, Chicago, Ill.)

Appearance of Package: Good
Container: Oblong tray printed in gold, pink and green. Overall cellulose wrapper.
Jellies:
Colors: Good
Texture: Good
Flavors: Good
Crystal: Good
Remarks: The best jellies of this type we have examined this year.

Code 8C60
Chocolate Pecan Fudge
1 lb.—$1.10

(Purchased in a retail candy store, Chicago, Ill.)

Sold in Bulk:
Fudge:
Color: Good
Texture: Good
Pecans: Good
Taste: Good
Remarks: A fine chocolate nut fudge; had a good chocolate flavor and very good pecans. The best chocolate nut fudge at this price we have examined this year.

Code 8D60
Chocolate Coated Pecan Fudge Bar
5 ozs.—27¢

(Purchased in a chain drug store, Chicago, Ill.)

Appearance of Bar: Good
Container: Long, oblong bar, white board slip. Gold backed foil wrapper. Outside paper band, white printed in gold and brown.
Chocolate Coating:
Dark: Good
Center:
Color: Good
Texture: Good
Taste: Bad. See remarks.
Remarks: Suggest formula be checked as fudge had a mouldy taste. It left a very bad taste in the mouth after eating.

Code 8E60
Chocolate Nut Fudge Square
1½ ozs.—5¢

(Purchased in a chain drug store, Chicago, Ill.)

Appearance of Square: Good
Wrapper: Cellulose wrapper printed in red, white and blue.
Fudge:
Color: Good
Texture: Good
Nuts: Good
Taste: Good
Remarks: The best 5¢ fudge bar of this kind we have examined this year.

Code 8K60
Toasted Coconut Marshmallows
11 ozs.—23¢

(Purchased in a department store, Chicago, Ill.)

Appearance of Package: See remarks.
Container: Polyethylene bag.
Marshmallows:
Coconut: Well roasted and had a good flavor.
Marshmallow:
Color: Good
Texture: Good
Taste: Good
Remarks: The best toasted marshmallows at this price we have examined this year. Very good eating and had a good flavor.

Code 8S60
Large Marshmallow Berries
10 ozs.—29¢

(Purchased in a chain drug store, Chicago, Ill.)

Appearance of Package: Good
Container: Polyethylene bag, red paper clip on top printed in black and white.
Berries: Large marshmallows in the shape of a strawberry with red sugar spots over them.
Marshmallow:
Color: Good
Texture: Good
Flavor: Fair
Remarks: A good marshmallow but lacked flavor.

CONFECTO-SPRED
Registered Trade Mark
VEGETABLE OIL RELEASING COMPOUND

Used Nationally for Over 5 Years
with Perfect Results
For Cooling Slabs—Band Ovens
Belts—Trays—Transfer Pans

★ *Contains no mineral oil*
★ Does not turn rancid
★ Thin films give perfect release
★ Economical to use
★ Easily applied—Can be sprayed
★ Stable at high temperatures

Confecto-Spray
Trade Mark
HIGH VISCOSITY VEGETABLE OIL

Confecto-Rub
Trade Mark
VEGETABLE KETTLE WAX

INTERNATIONAL FOODCRAFT CORP.
184 NORTH 8th ST., BROOKLYN 11, NEW YORK

Code 8B60
Maple Fudge
1 lb.—95¢

(Purchased in a department store, Chicago, Ill.)

Sold in Bulk:
Fudge:
Color: Good
Texture: Good
Nuts: Good
Taste: Good
Remarks: A good eating nut fudge, but lacked a good maple sugar flavor.

Code 8L60
Assorted Summer Coated Candies
1 lb.—$1.10

(Purchased in a department store, Chicago, Ill.)

Appearance of Package: Good
Container: Oblong box, one layer type. White glazed paper top printed in brown, pink and gray. Imprint of lady in colors. Cellulose wrapper.
Appearance of Box on Opening: Good
Number of Pieces: 32
Assorted Bon Bons:
Colors: Good
Centers: Good
Taste: Good
Walnut Top Bon Bons:
Colors: Good
Centers: Good
Taste: Good
Cashew Clusters: Good
Chocolate Sprill Top Bon Bons:
Color: Good
Centers: Good
Taste: Good
Peanut Clusters: Good
Vanilla Caramels: Good
Assortment: Good
Remarks: The best box of summer coated candies we have examined at this price.

Code 8V60
Summer Coated Peanut Clusters
4½ ozs.—39¢

(Purchased in a chain drug store, Chicago, Ill.)

Appearance of Package: Good
Container: Oblong box, white glazed paper top printed in red, blue and yellow. Imprint of clusters. Cellulose wrapper.
Appearance of Box on Opening: Good
Number of Pieces: 14
Summer Coating: Good
Clusters:
Texture: Good
Peanuts: Good
Taste: Good
Remarks: The best summer coated peanut clusters we have examined this year. We find that most summer coated peanut clusters are very hard to eat because too few peanuts are used and the piece is almost all coating.

Code 8J60
Assorted Fudge & Divinity Fudge
1 lb.—49¢

(Sent in for analysis)

Fudge: Vanilla and chocolate nut.
Colors: Good
Texture: Good
Nuts: Good
Taste: Good
Divinity: Pink and green.
Colors: Good
Texture: Good
Flavors: Poor
Remarks: Fudge was good but divinity had very cheap flavors. Very cheaply priced at 49¢ the pound.

Code 8I60
Toasted Coconut Marshmallows
12 ozs.—27¢

(Purchased in a chain drug store, Chicago, Ill.)

Appearance of Package: Good for this type of confection.
Container: Polyethylene bag printed in red and white.
Marshmallows:
Coconut: Well toasted and good flavor.
Marshmallow:
Color: Good
Texture: Very good
Taste: Good
Remarks: One of the best marshmallows of this type we have examined this year. Well made and good eating.

must be WILBUR chocolate

. . . for Wilbur puts the final touch of good taste to your quality products

WILBUR CHOCOLATE CO.

Lititz, Pennsylvania

"When it comes to quality, people mean more than machines"

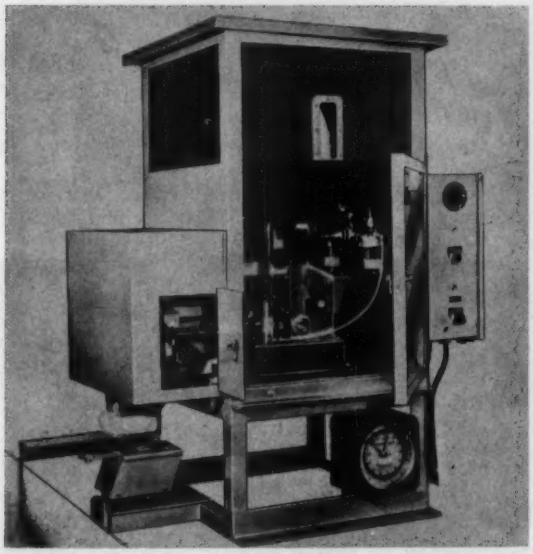
New Products

A new vegetable gum, derived from okra, has recently become available. Water dispersions of dehydrated powdered okra are similar to those of other water soluble gums such as gum tragacanth, arabic and karaya, which provide bodying and protective action for emulsions.

One unique property of okra gum lies in its ability to form a "rope" with pouring qualities similar to natural egg white. An interesting property of okra gum is its action as a crystallization inhibitor. Added in relatively small amounts, okra gum will cause sugars to crystallize out in extremely fine form. Okra gum also acts as a softening agent and prevents embrittlement of a candy such as fudge stored over a long period of time.

For further information write: Gum and Special Products Department, Morningstar-Paisley, Inc., 630 West 51st Street, New York 19, N. Y.

A new machine for continuous weighing of loose, free flowing granular solids has been developed. The continuous weighing machine introduces a new and improved system for inserting dry additives into processing lines operating by conveyor, pipeline or other continuous flow methods. The unit is based on accurately net weighed quantities dumped at uniform time intervals. A precision scale weighs precise amounts of the additive in a net weigh hopper. An air operated mechanism then dumps the additive into a small, secondary hopper which, in turn, feeds the additive into a vibratory feeder. From the vibratory



feeder the additive is introduced into the continuous processing line in a uniform even flow.

Machines can be arranged as single production units or they may be electrically synchronized with discharge chutes designed to deliver the product through a single spout.

The new continuous weighing system is designed to improve quality control of many products, by assuring that additives are evenly and thoroughly distributed in mixing and batching operations.

For further information write: The Exact Weight Scale Company, 538 East Town Street, Columbus 15, Ohio.

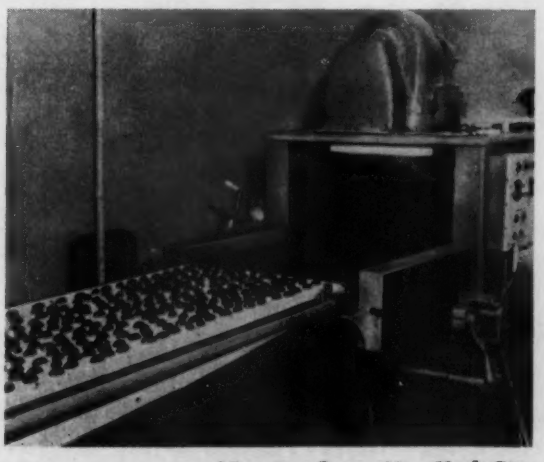
A new polyethylene film has been introduced that apparently consists of two types of polyethylene combined into one film. Not a great deal of information was given as to the composition of the film, but it

New cooling tunnel belt

A new type of cooling tunnel belt has been in operation at the factory of S. Zitner Company in Philadelphia for over two years, and has proved to be an excellent, long wearing belt for this purpose.

This belt, trade named "Permagloss"*, is made by joining a sheet of Du Pont's Mylar polyester film with an embossed vinyl. The resulting belt, exceptionally light in weight, seems to have proven itself at the Zitner factory as of premium quality for chocolate work.

The original belt was installed in May 1958, and was 23″ by 140′. Just one year later it was extended, by the addition of 30′, to cover the packing table section of the conveyor. Since then the belt, with a total length of 170′, has performed entirely satisfactorily, without any evidence of deterioration in contact with chocolate.

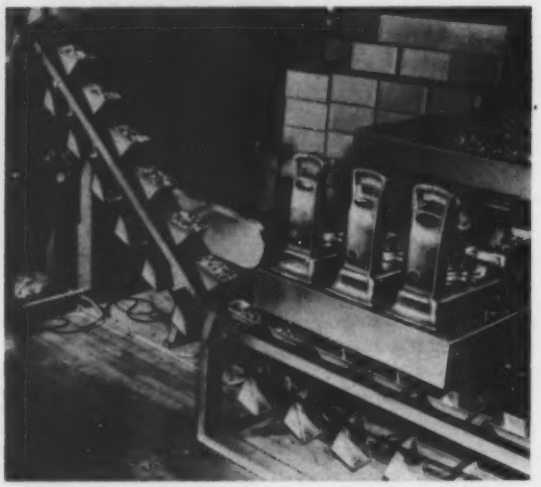


**Lassiter Corp., New York City*

is claimed that it is the result of a radically new manufacturing process.

The film claims the clarity of films compounded for this purpose, in combination with the impact strength of the more durable varieties. The film is particularly designed for use in bag making machines and the form-and-fill type of machine.

For further information write: E. I. du Pont de Nemours & Co., Wilmington 98, Delaware.



A new scale has been developed which is capable of automatic measures within 1/64 of an ounce. Its weighing capacity is five pounds. Triple weighing units operate simultaneously and accurately; adjustments are made quickly and easily.

For further information write: Mercury Heat Sealing Equipment Co., 2601 N. Howard St., Philadelphia 33, Pa.

A new automatic case tape-sealing machine for random sized cases has been developed. Each section of the machine adjusts automatically for the height and width of the case which it is about to receive. Either top sealing, or both top and bottom sealing can be done on the machine.

For further information write: Genreal Corrugated Machinery Co., Palisades Park, N. J.

An improved coated layer board for sticky candies has been developed. It practically eliminates sticking of any types of candies. The board is pure white, available in rolls, sheets or pre-cut base cards.

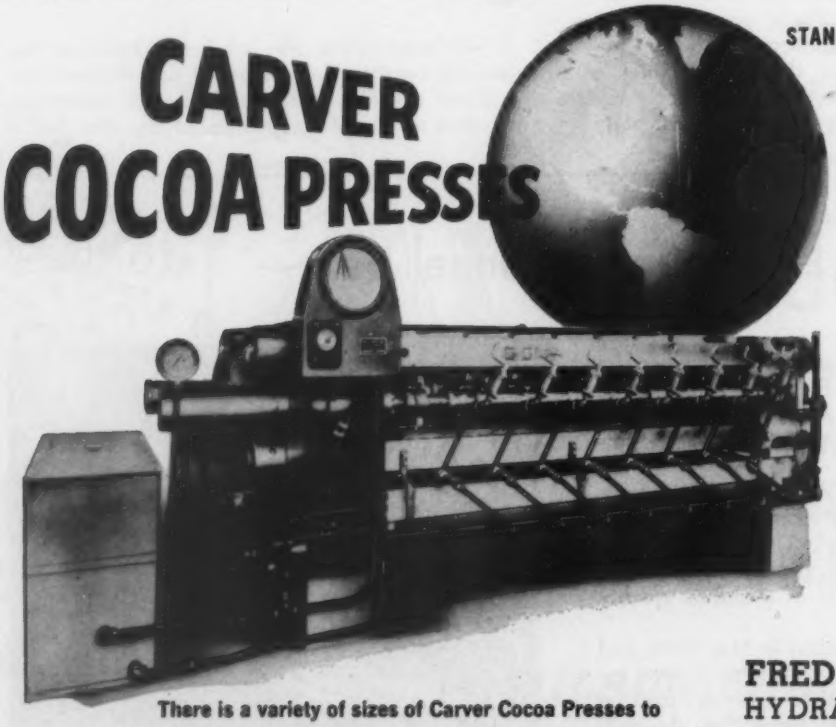
For further information write: Murnane Paper Company, 1510 N. Kostner Avenue, Chicago, Chicago 51, Illinois

A swatch booklet of glassine and greaseproof papers is available containing 23 representative samples of the more than 200 grades and basis weights of these papers. Samples of plain, waxed, printed, lacquered, wax-laminated, laminated to foil, metallized, heat-seal treated, wet strength treated and release treated papers are bound in the book.

For further information write: Glassine and Greaseproof Manufacturers Association, 122 East 42nd Street, New York 17, New York.

STANDARD THROUGHOUT THE WORLD

CARVER COCOA PRESSES



Every major advancement in the design of Cocoa Presses has a CARVER patent behind it.

DESIGNED with Experience
CONSTRUCTED with Precision
SERVICED World-Wide

There is a variety of sizes of Carver Cocoa Presses to meet every requirement. We solicit your inquiries.

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PRODUCT CONTAMINATION

YOUR PROBLEM?

THE
EUROMAC
BAUERMEISTER
MASSE – CLEANER Z-12
OFFERS:

- RANGE OF PARTICLE SIZE REMOVAL
- CONTINUOUS OPERATION
- HIGH OUTPUT
- COMPACT AND EASY TO CLEAN
- NO LABOR REQUIRED — MINIMUM MAINTENANCE

euromac

EUROMAC, INC. PALISADES PARK N. J. WHitney 3-5890

There's profit in pops when you use the Latini

Conservatively, 100 boxes per hour* of 120 count

A second Latini unit can be operated by the same person

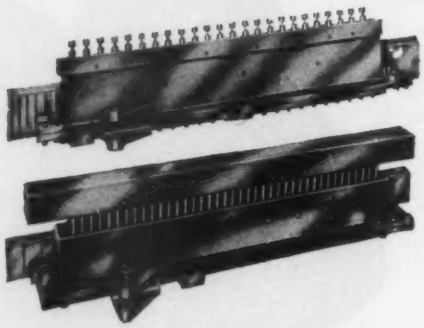
*based on a 50-minute hour

Latini Die Pop Machine with Wrapping Attachment

225 Pops formed and wrapped per minute
No handling between forming and wrapping.
Eliminates breakage and labor.

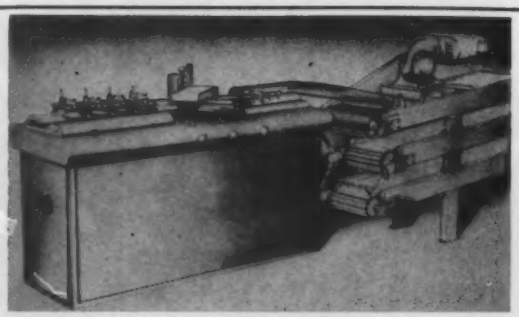
THE HOFFMAN CLUSTER MACHINE

- Handles all free-flowing nuts.
- 2 more clusters per row
- All stainless steel construction
- Available in 16-24-32 and 40 inch widths.



Mill River Pump Bars

Faster, better, and more accurate due to precision workmanship. Water-sealed—Sanitary—
No Grooves—No Washers.
Available in all sizes.
Single, double, triple and quadruple row for all depositors.
Also available—Special Chocolate Pump Bars—Sanitary Stainless Steel Hoppers.

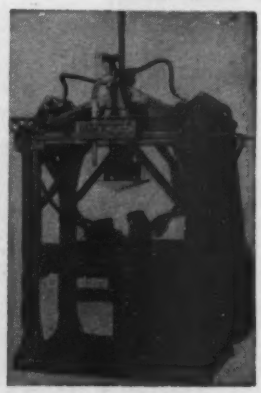


M.F.P. STICK-MASTER

(Patent Pending)

Integrated Sizer & Twister with electronic speed control.
Flexible — Diameters for ¼" to 1½"; length from 4" to 16".
Productive — up to 1500 inches per minute.
Sanitary — Stainless steel finish — Candy always in sight.

BERKS HARD CANDY MIXER



Mixes color, flavor and acid in 75 to 125 pound batches at rate of 1000 lbs./hr., 10% scrap may be included. Saves labor and floor space. Assures uniform mixing and constant rate of production through the day.

Representative: *John Sheffman, Inc.*

152 West 42 Street **New York 36, N.Y.**

"Skippy Boy" pralines: a retail success story

More than 3,000 Skippy Boy pralines are produced each day in B. E. Stewart's Memphis, Tenn. plant but he well remembers that it took more than a week to sell his first batch.

It was 1940 when Stewart opened the doors of a small store fronting Memphis' bustling Madison Avenue. Specializing in fresh orange juice at a nickel a drink, Stewart had plenty of customers. But unless they were especially thirsty, most customers left with the same check average—five cents.

Casting around for something to boost his check average, Stewart recalled a praline recipe of Mrs. Stewart's. If he could get each customer to buy a five cent praline after he had finished his orange juice, he could double his check average.

Mr. and Mrs. Stewart went to work and made up their first batch of pralines in a back room of the store. By the end of 10 days the pralines were gone but the check average had risen to but six cents..

What could be done to induce his orange juice customers to purchase the pralines?

Mrs. Stewart, an alert business woman, pointed out that most of the pralines were being sold to the same people. Once they had bought one, they came back for more. But the majority of the customers simply gulped down their orange juice, handed over a nickel and departed.

"Let's break up some pralines and give bite-size samples to our customers," suggested Mrs. Stewart.

Within 30 minutes customers were being offered samples of the Stewarts' pralines and by closing time the entire supply of pralines was gone. Mr. and Mrs. Stewart happily went into the back room and mixed up another batch for the next day.

It wasn't long before praline sales, sold both individually and by the dozen (dropped into a paper sack) were approaching the orange juice sales. It was time, the Stewarts decided, to provide a name for their confection and to up-grade their packaging method.

Dennis, the two-year old son of the Stewarts, was in the store one day when the idea for a product name struck the couple at the same time. The Stewarts had nicknamed Dennis "Skippy Boy" and almost before the child could realize what was happening he was being seated before a camera having his picture taken.

When the attractive new boxes and individual wrappers were delivered, the picture of Skippy Boy was imprinted on them. The same picture remains on Skippy Boy boxes and bags used today.

World War II curtailed the growth of the praline business but by 1950 volume demanded that larger quarters be found. Locating suitable facilities proved difficult and for almost two years the Stewarts looked in vain for a new building.

A new motel was being built on the outskirts of Memphis in the summer of 1952 and the Stewarts were approached on leasing space next to the motel's restaurant. Looking the location over, the Stewarts found it contained ample space for praline production in the back and a gift shop in the front.

That fall the Stewarts moved to their new address in the first Holiday Inn motel to be built. Today, the Holiday Inn chain has swelled to 135 motor hotels dotting highways from coast to coast and Skippy Boy pralines are sold in many of them.

While Memphians sought out the Stewarts to buy

Dennis Stewart, now 18 years old, holds a box of pralines bearing the picture taken of him when he was two years of age. The confection, named for Dennis whose parents called him "Skippy Boy," is still packed in boxes carrying Dennis' baby picture. The boy is now a student at the University of Tennessee where he is studying agriculture.

pralines at their new location, the couple found an entirely new source of clientele—vacationers from the north who stopped for a night at the Holiday Inn and for the first time tasted a praline.

Many of these people—from Iowa, from Nebraska, from Indiana and Ohio—who, in 1952 tasted their first praline, still are steady customers of the Stewarts. Hundreds of residents living north of the Mason-Dixon line order Skippy Boy pralines several times a year by mail. And this list of Yankee lovers of the Memphis-made confection mounts annually.

"It's not at all unusual to have a customer buy one praline, eat it and then order a whole box (12 pralines), or even two or three boxes," Stewart said. "But one night a man came in, bought two pralines and I thought that would be the last I'd see of him."

The next morning, when Stewart arrived to open up, the man was waiting at the front door.

"I want 1,000 boxes of pralines sent to my plant in Paducah, Ky. in time for Christmas," he told the astonished Stewart. The pralines were for distribution to the firm's customers and accompanied their Christmas orders.

Another customer of Skippy Boy pralines is a resident of Illinois who is considered by the National Sales Executives Club to be one of the nation's outstanding salesmen. Every time this salesman plans his itinerary for an out-of-town trip he air mails a list of names to Stewart. The list contains the names of receptionists of the companies the salesman plans to call on during his trip. Stewart mails each receptionist a one-pound box of pralines along with a card bearing the sales representative's name and the name of his company.

The salesman recently confided to Stewart that the pralines have helped open many a door to a busy executive and resulted in sales totaling many thousands of dollars.

Six years after locating his facilities at Holiday Inn, lack of praline production space forced Stewart to move again. This time he built his own plant with 3,500 square feet of floor space. Located on seven acres of ground, he has ample area to expand.

Stewart's production line is small but his skilled employees can cook and hand-dip more than 3,000 pralines a day. Each praline weighs an average of 1¼ ounces.

After the candy has cooked, women hand-dip the mixture into molds. The pralines, after they have hardened, are placed in individual aluminum foil bags. Then they move to the packing line where they are placed in boxes of 12 or 24. A special box resembling a bale of cotton also is marketed as a novelty item and is popular with people in the northern tier of states.

With sales outlets scattered throughout the South, Stewart is intrigued with the manner in which his customers merchandise Skippy Boy pralines.

Many of his customers actively push the sale of individual pralines (at 12 cents each) because they have found that it helps boost the sales of one-pound boxes ($1.44). Others consider the pralines "just another item" and as a result sell one box to an active merchandiser's six.

The entire Stewart family works to produce the pralines bearing the nickname of Dennis, second from left. Dougley, 11, left, works Saturday in the packaging department and Dennis joins him during summer vacation from the Univesrity of Tennessee. B. E. Stewart, founder of the firm, is in charge of sales and Mrs. Stewart heads both production and sales promotion. Dougley is holding the large box of 24 pralines and Mrs. Stewart shows the 12 unit box.

One customer of Stewart's is Admiral Benbow Inn, Inc., a large restaurant chain in the South. The only candy it sells is the Stewart-made praline.

"Many of the managers in the chain's various restaurants did no merchandising of the pralines and sales were only so-so for two or three years," Stewart said. "Then a new manager of the company's smallest restaurant astounded everyone by selling more pralines in a month than all the rest of the firm's restaurants combined."

Stewart said the manager was promoted to marketing director and last Jan. 1 began a praline sales incentive contest among all restaurants in the chain. Restaurant managers were shown how to display the pralines and were furnished with two-color point-of-purchase signs.

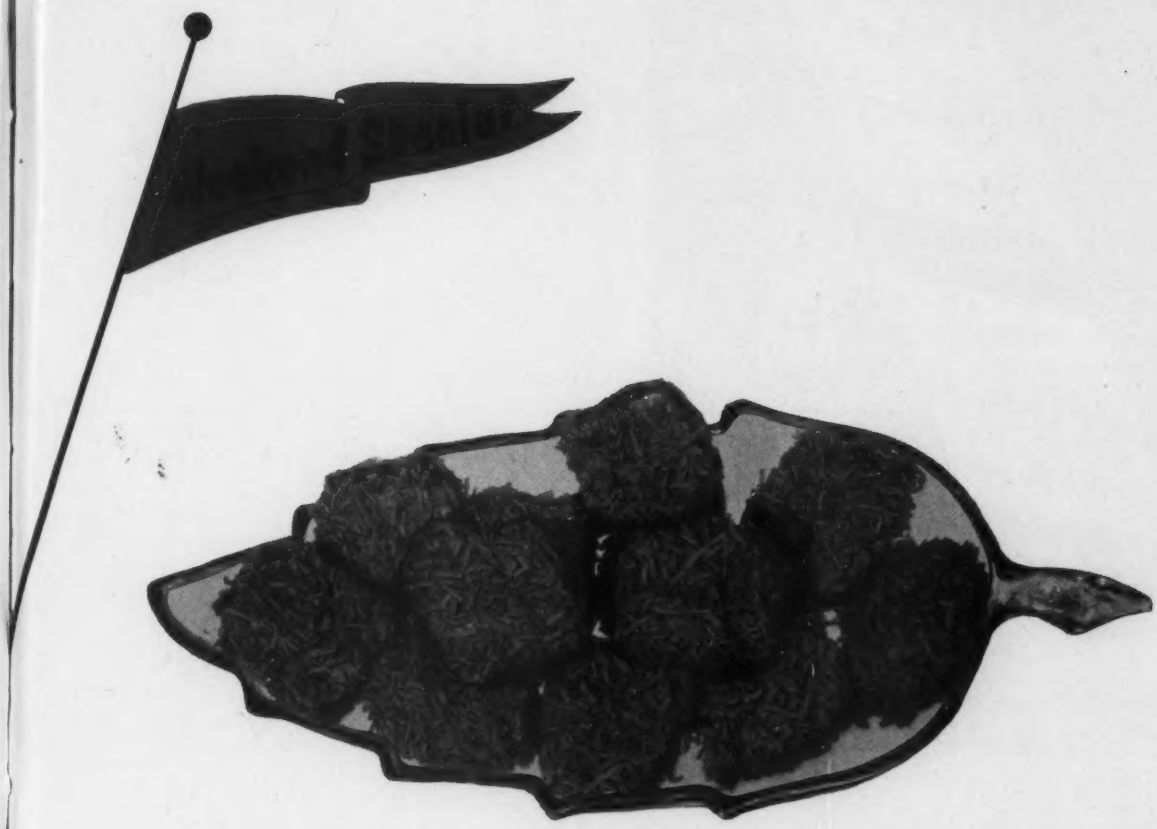
The results? In the first quarter of this year the chain's restaurants sold more pralines than in all of 1959. The company, according to projected figures, will make a net profit this year in excess of $15,000 on pralines alone.

Skippy Boy pralines, first sold only in Memphis and then throughout the Mid-South, now are being marketed in increasing volume throughout the nation.

Ed Morse of the New York bureau of the Associated Press tasted a Skippy Boy praline and released a story on the Memphis-made candy to newspapers throughout this country and Canada. Skippy Boy pralines have been shipped to residents of every state, including Alaska and Hawaii, plus all the provinces of Canada.

Probably the greatest tribute to the increasing popularity of Skippy Boy pralines occurred when the United States Post Office promptly delivered an envelope, mailed from San Diego, Calif., and bearing only this address:

c/o Postmaster, Shelby Center, Tenn.
That Place out Past Shelby
Center that Makes Pecan Pralines
Highway 70 toward Jackson, Tenn.



Toasted marshmallows

BY HERB KNECHTEL
Knechtel Laboratories

Formula:

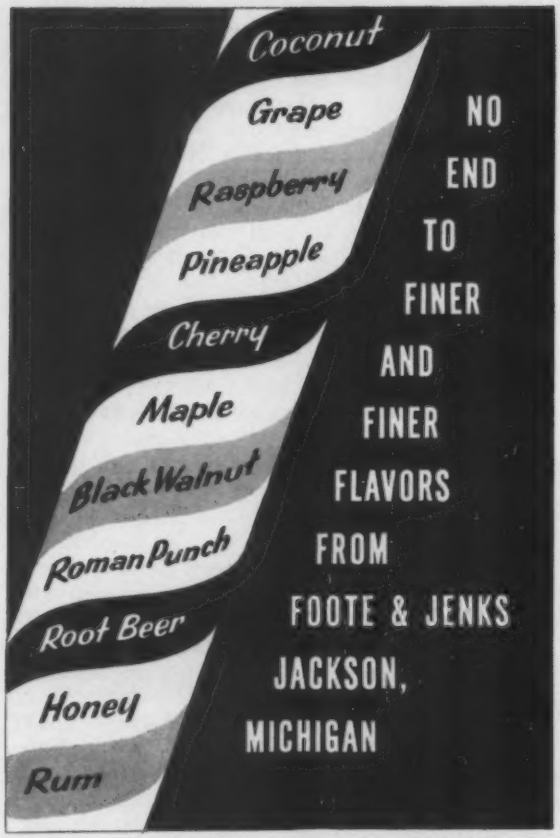
16 pounds sugar
16 pounds corn syrup
1 pound 225 bloom gelatine
4 ounces egg albumin
*toasted cocoanut
vanilla and powdered mace

Procedure:

Thoroughly dissolve the egg albumin in one pound of water. Soak the gelatine in five pounds of water. Place the corn syrup in a 60 quart mixer and thoroughly mix in the egg albumin and gelatine solutions. Cook the sugar with three quarts of water to 242° F. Start the beater on high speed, and thread the cooked sugar batch in. Add ½ level teaspoon of powdered mace and vanilla. Beat 8 to 12 minutes to maximum volume.

Spread on a paper-lined table top, about one inch thick. When cold, sprinkle the top with toasted coconut. Turn the batch over, moisten the paper and remove it. The slab can then be cut into one inch squares with a roller knife.

**If the coconut has not been freshened, soak it for several hours in a solution of invert sugar.*



NEWSMAKERS

Dodge & Olcott has appointed **Kenneth W. Hartley** vice president and sales manager. Mr. Hartley has been a member of the D&O sales staff since 1949 and since 1951 has managed the Chicago office.

Robert H. Wilson has been appointed national sales manager, bulk products of **The Nestle Company.** Mr. Wilson joined Nestle in 1946 and prior to his appointment was assistant manager, bulk sales. In his new position he will continue to direct the activities of the bulk sales force in selling chocolate coatings, bulk cocoas and ice cream flavors.

Grover L. Foote has joined **Milprint, Inc.** in the position of product manager of the Film and Paper Division. Mr. Foote will be in charge of analyzing current applications of these packaging materials.

Corn Products Sales Company has appointed **J. Robert Von Bargen** assistant eastern regional manager of its Corn Products Division. **Cleo Mikel** has been named district manager at Buffalo, New York, succeeding Von Bargen in that post.

An agreement proposing the merger of **Lassiter Corporation** into **Riegel Paper Corporation** has been signed by the boards of directors of the two companies. Both companies will convene special stockholders' meetings on or about September 28th to vote on the merger proposal.

The purchase and sale of cocoa powder, cocoa cake, cocoa butter and chocolate liquor at **Woodward & Dickerson,** Philadelphia, will be handled by **Mr.** C. W. Aronow the company has announced.

People who use pecans for profit...

Because: they're high oil content pecans—bright, full-meated and firm, with the delicate flavor of freshly shelled pecans.

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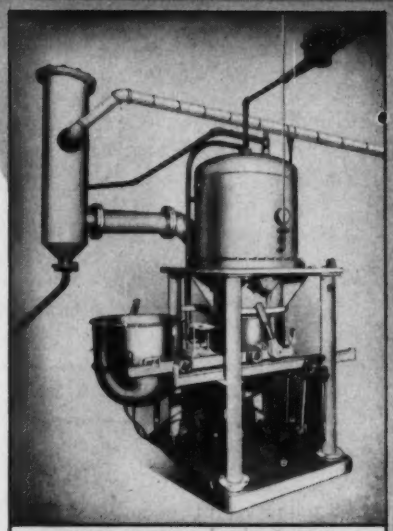

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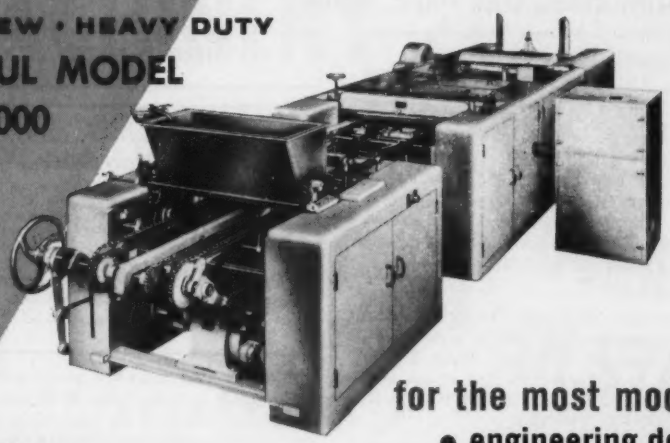

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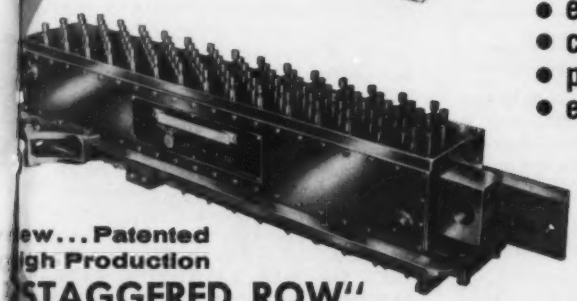

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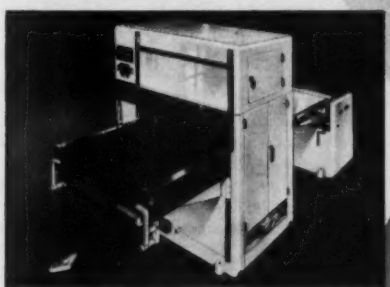

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National machines are smooth, steady, dependable producers . . . require little attention . . . less labor . . . and least maintenance.

Meticulous care and planning go into the manufacture of each machine. Not only is every part manufactured to the most exacting tolerances, but each assembly is thoroughly tested. It is only with such care and planning that you get a mechanically perfect engineering masterpiece.

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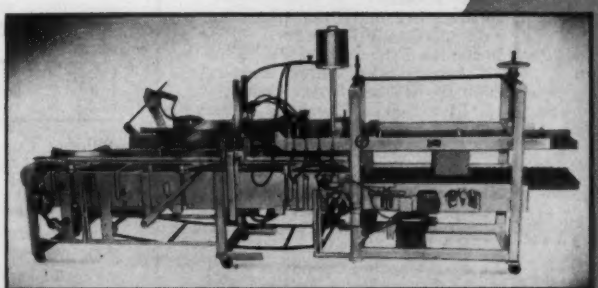

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N.E. 600-lb/hour continuous cooker, Jap cutter, Blommer tempering tube, Racine caramel cutter, Triumph cookie depositor. Box 8602, The MANUFACTURING CONFECTIONER.

One 2 ft. cream beater direct drive. One 4 ft. cream beater belt drive with 2 H.P. single phase motor, both in best condition. Write or call Chas. Greenberg, 1246 Laclede Rd., Toledo 12, Ohio, Phone GR 9-5836.

For sale: 500 lb. chocolate melter, motor driven, automatic temperature control, chocolate melters, stoves, cut roll machines, batch rollers, steam agitating kettles, water cooled slabs, marbles, Hobart beaters, copper kettles, cutting machines, etc. S. Z. Candy Machinery Co., 1140 N. American St., Philadelphia, Pa.

FOR SALE

Bonus Cluster Machine.
Model K #3 Savage Fire Mixers.
20 gal. & 50 gal. Model F-6 Savage Tilting Mixers, copper kettle.
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12—Package Machinery, model 'K' kiss wrapping machines. All in good condition and all set to wrap a piece 3/4 of an inch in diameter by 3/4 of an inch cut-off. Box 7604, The MANUFACTURING CONFECTIONER.

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Candymaker, creams, hard candy, chews, also enrober. Supt. for 20 years in wholesale plants making box chocolate bars and bag items for chains and supermarkets. Good cost and production man. Competent to assume full responsibility of factory operation. Box 8603, The MANUFACTURING CONFECTIONER.

Esq. available to take complete charge of chewing gum base dept. and general candy pan line including Choc. M.M. dept. fondant fontex Jelly work & general slab work. I will teach all this in the U.S.A. and foreign countries. Best references from U.S. and foreign countries. Box 8604, The MANUFACTURING CONFECTIONER.

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Folding Candy Boxes: All sizes carried in stock for prompt delivery. Plain, stock print or specially printed. Write for our new catalog of every-day and holiday fancy boxes, and all paper products used in the manufacture and packaging of candies. **Paper Goods Company, Inc.**, 270 Albany Street, Cambridge 39, Mass.

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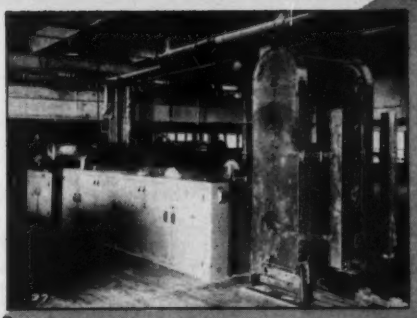

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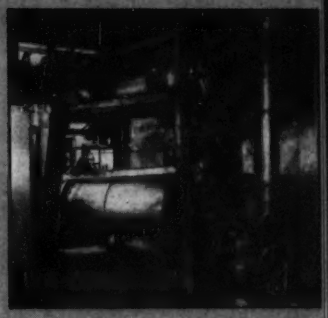

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We have hundreds of high speed wrapping machines in stock to wrap single candies, all sizes of bars and to overwrap all sizes of packages.

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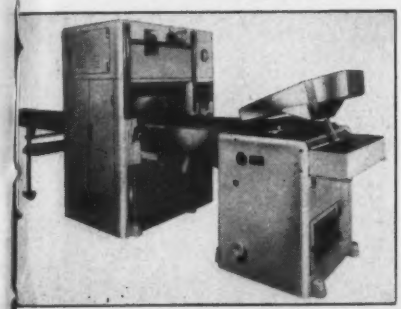
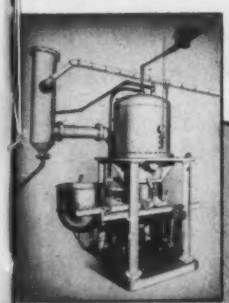


National Equipment 24" Bon Bon Enrober. Used less than 1 year. All parts which come in contact with the coating material are made of stainless steel. Available with new machine guarantee. Also 24" and 32" latest style Standard Streamlined Enrobers on hand.



National Equipment high speed high-gloss Continuous Hard Candy Vacuum Cooker. 600 to 2,500 lbs. hourly production.

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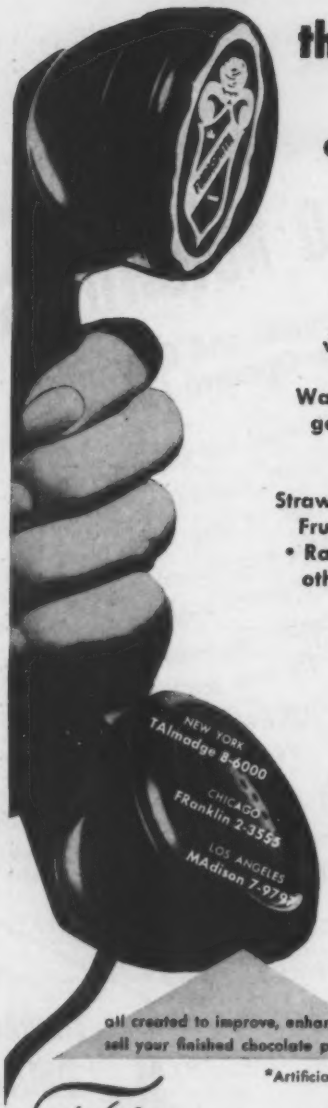

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33-1/3% more capacity . . . 24" and 30" heights

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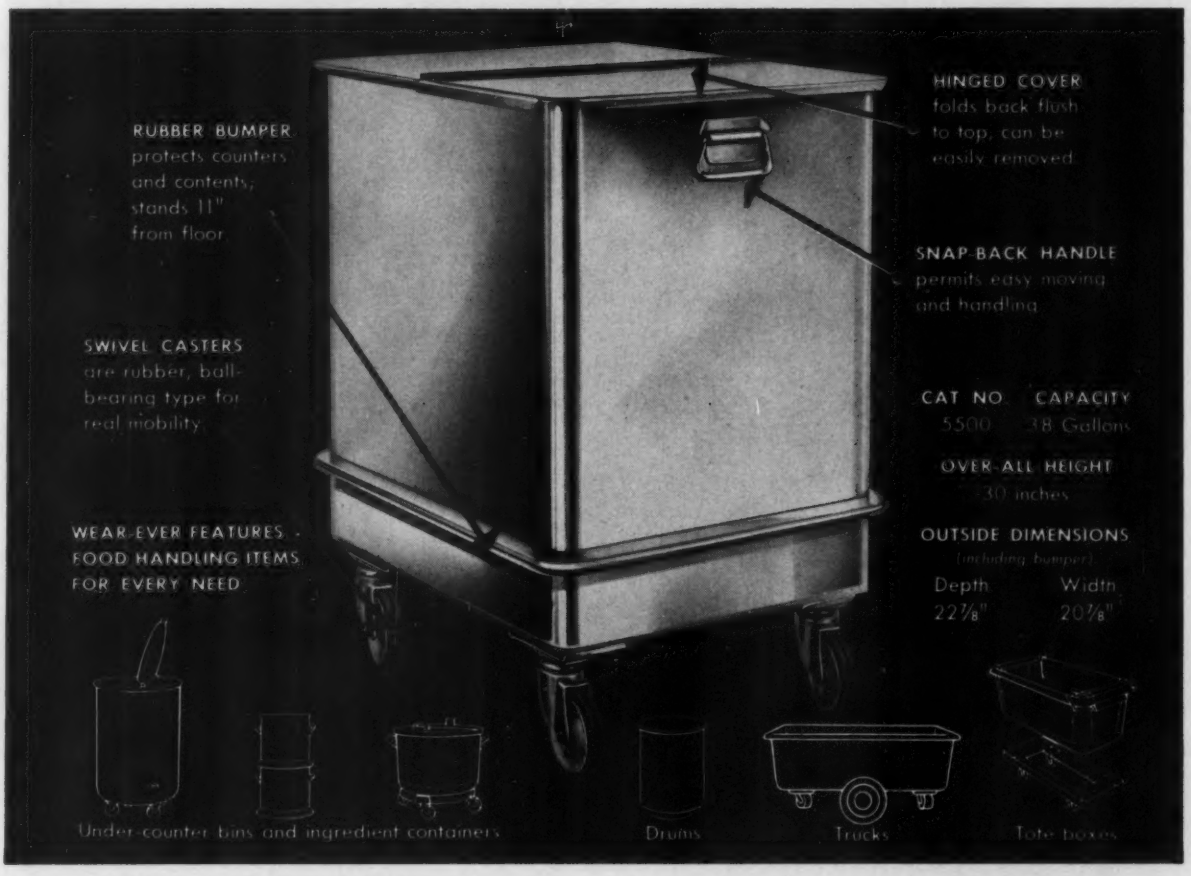

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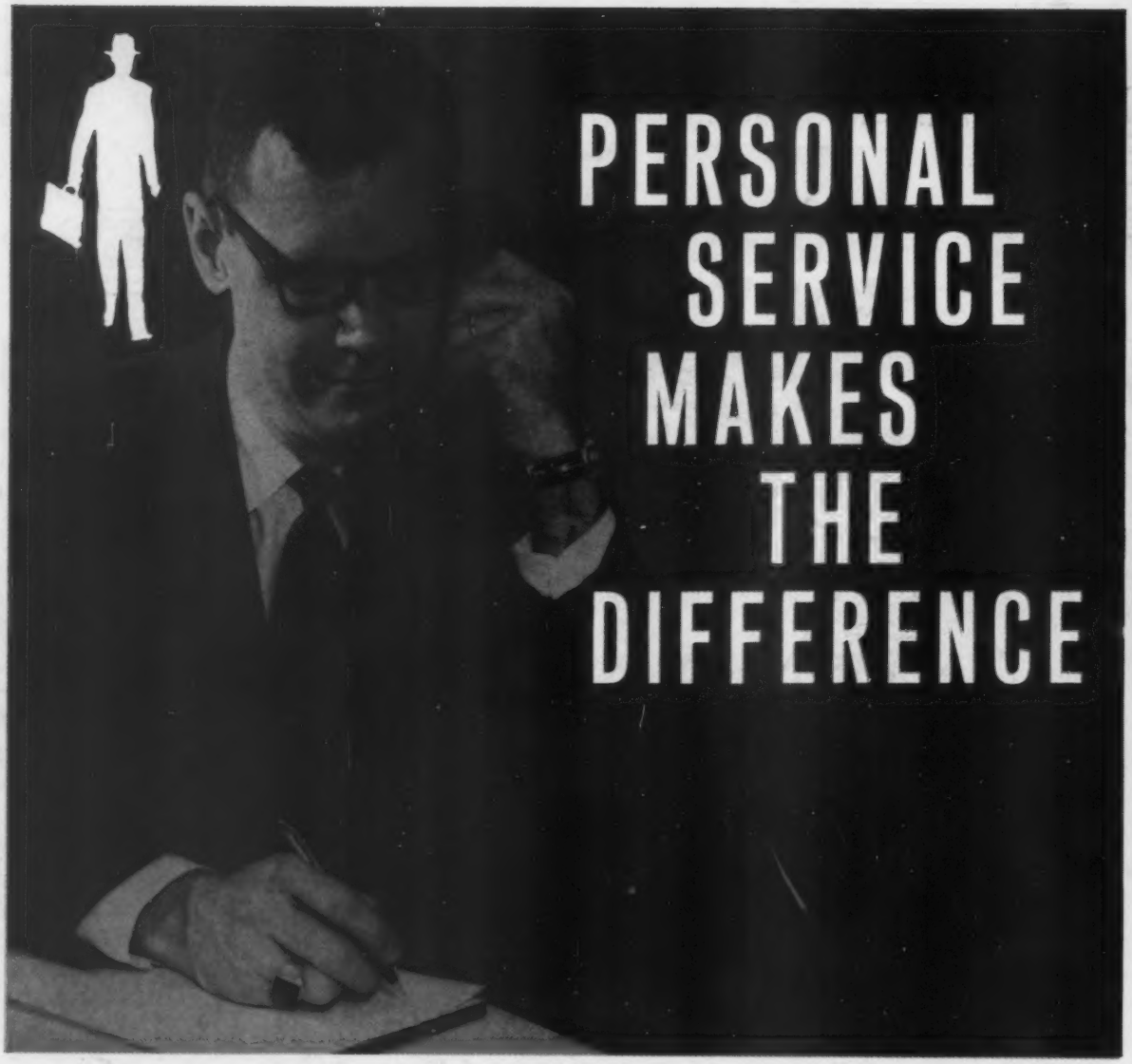

Call the man from Hubinger...

How long does it take you to make a phone call? That's how close you are to help, when candy making problems come up. All you need to do is call the man from Hubinger . . . He brings with him the benefit of over three-quarters of a century of working first-hand with candy manufacturers all over the country. He can help you, too, whether you're primarily concerned with problems of taste, texture, shelf life . . . or, in-plant troubles such as foaming, crystallization, materials handling and the like. Don't wait until you have trouble. Call the man from Hubinger, NOW. You'll like his practical, sleeves-rolled-up approach. His kind of personal service . . . makes your product even better!

OK BRAND

- **CONFECTIONER'S CORN SYRUP**
- **DRI-SWEET CORN SYRUP SOLIDS**

OK BRAND Confectioner's Corn Syrup is economical . . . saves time because it's easy to handle . . . cooks rapidly without foaming. Makes your candy taste better because it maintains the proper moisture needed for long-lasting freshness. Prevents crystallization, and is the same dependable quality, lot after lot. You can also get OK BRAND Corn Syrup in dehydrated form. This product, OK BRAND Dri-Sweet Corn Syrup Solids, is ideal for use in formulas that need less cooking. It, too, gives you high quality consistently.

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